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beyond disciplines

AN ACTION RESEARCH INVESTIGATING HOW TO PLAN, IMPLEMENT
AND REFLECT ON AN INTERDISCIPLINARY UNIT WITH VISUAL ARTS
AND PHYSICAL EDUCATION

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BEYOND DISCIPLINES

An action research investigating how to plan, implement and reflect on an interdisciplinary unit with visual arts and physical education

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Abstract

In my research, I investigate interdisciplinarity from teacher's perspective. Together with the visual arts teacher of International School of Helsinki, Monica Joensuu, I designed, implemented and reflected on an interdisciplinary unit with visual arts and physical education. The students who participated in the unit were 6th graders at the International School of Helsinki. The unit lasted six weeks, and the students had 2 X 75 minutes of visual arts and P.E. each week. With my research, I pose a question: What are the teachers' demands to create an interdisciplinary unit, and how is interdisciplinary unit planned, implemented and reflected? The data of my research is a collection of my own personal journals, diaries and notes in which I discuss my observations during the three phases of my research: planning, implementation, and reflection.

Keywords interdisciplinary, transdisciplinary, cross-disciplinary, multidisciplinary integration, art education, physical education, sports

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Opinnäytteessäni tutkin toimintatutkimuksen avulla kolmessa vaiheessa kuinka tieteidenvälisyyttä voidaan opettaa peruskoulussa. Pohdin minkälaisia vaatimuksia opettajilta vaaditaan kun suunnitellaan, toteutetaan ja reflektoidaan poikkitieteellistä opintojaksoa. Toteutin Helsingin kansainvälisessä koulussa opetuskokeilun, jossa yhden jakson ajan 6. luokkalaiset oppilaat tutkivat poikkitieteellisiä yhteyksiä liikunnan ja kuvataiteen välillä. Jakso kesti kuusi viikkoa, jonka aikana oppilailla oli 2 X 75 minuuttia kuvataidetta ja liikuntaa viikossa. Tutkimusaineistoni koostuu omista päiväkirjamerkinnöistäni, muistiinpanoistani ja huomioistani, joissa pohdin jakson toteutumista ja siinä esiintyviä havaintoja opettajan näkökulmasta. Lisäksi tutkimuksessani oleellisessa osassa toimi Helsingin kansainvälisen koulun kuvataideopettaja Monica Joensuu, joka oli mukana toteuttamassa tutkimusta. Tutkimukseeni olen valinnut lähtökohdaksi opettajan näkökulman.

Avainsanat tieteidenvälisyys, poikkitieteellisyys, integraatio, kuvataide, liikunta, urheilu

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*To my father, who helped me discover sports, and
to Jim, who helped me discover fine arts.*

BACKGROUND AND INTRODUCTION

My father took me to my first basketball practice when I was 7 years old. The first time I got to dribble the ball was when my coach put a blindfold around my head and shouted: "Dribble!" Obviously I could not do it. After that practice, I continued 2 more months and decided to quit. Basketball was not for me, I thought. I tried other hobbies afterwards, such as gymnastics, Girl Scout, and dancing. However, none of those felt right for me. So I returned to play basketball again, when I was 9 years old. Today, almost two decades later, I am still playing.

During my career as a basketball player, I have achieved a lot. I had the privilege to play basketball for four years in a college in the United States. I have played professionally in both Sweden and Finland. And, I can proudly say I have played 34 junior national team games, and represented Finland women's national team in 11 games. My career as a basketball player continues to develop as I am representing Tapiolan Honka women's team during the season 2013-2014.

As I played basketball in the United States, I was also studying for my undergraduate degree. At that time, I found something else that slowly became as important to me as basketball: Visual arts. During my second year of college I declared my major as fine arts with a concentration on photography. Soon I found myself caught in the middle of playing intercollegiate sports and completing a degree in fine arts. When my professors emphasized the importance of spending time in the visual arts studio and producing more work, my coach demanded more and more time in the gym. When my fellow visual arts majors spent late nights making their own art work, I had to go to sleep early because of 6 am practice the next morning. Since then, I have constantly been balancing with two different disciplines which both are very important to me. Somehow I completed my undergraduate degree while playing four full seasons of basketball. Afterwards, I returned to Finland with a great experience and expertise from both disciplines, visual arts and sports.

The struggle I faced while studying fine arts and playing basketball led to a more in depth understanding of myself. From that point on, I have thought of myself as an interdisciplinary person: A person with two areas of expertise, both equally present, and evenly significant to me. Davis (2007) claims that interdisciplinarity is a strong and influencing idea since it suggests that by communicating with one another, different areas of knowledge and

information may benefit. Those two disciplines of mine, visual arts and sports, have become supporters of each other, one helping another to operate and stay balanced. Moreover, in my personality those two have joined, blended together and created a person with interdisciplinarity within. Because of my strong background and love for both disciplines, in my thesis I decided to investigate the matter of interdisciplinarity more in depth.

The struggle of having arts and sports in an equal position is not only visible in my own life, but also in Finland. For example, Paavo Arhinmäki is the current Minister of Culture and Sport in Finland. In 2011, he was criticized by the media because instead of being at the opening of the new Music Hall in Helsinki, he decided to attend the opening game of Finland against Croatia at the men's basketball European Championships in Lithuania. The supporters of art and culture in Finland were both bewildered and upset about Arhinmäki's dismissal from the opening (Tamminen 2011). Both events were deniably important to the Finns. This was the first time that Finland men's basketball team was represented and qualified to the European Championships in 16 years (Tamminen 2011). Simultaneously, the city of Helsinki had been waiting for a new Music Hall for almost two decades (Official website of Paavo Arhinmäki, 2.11.2013). To me, this news was both surprising and amusing. As being equally interested in both art/culture and sports, I saw no problem in Arhinmäki's choice to attend the basketball game. In my opinion, the dilemma lies in the collision. The next thing we can ask, is why we have a same minister for both culture and sports? Maybe those two are not that far from each other after all.

Even though visual arts and sports seem to be fighting for a particular status in the Finnish society, I believe those two disciplines can support each other rather than be viewed as so distant. As an athlete, one must be willing to accept criticism from others, at all times. One will constantly be judged (both good and bad) solely based on your performance. Any athlete who wants to succeed needs to have complete self motivation and willingness to work hard. Additionally a lot of self-driven athletes have a mentor to look up to. It can be another player, already finished with his/her career or still playing, an inspiring coach or even a fellow teammate. A similar type of mentality is also part of being a visual artist. As a visual artist, one should possess similar characteristics as an athlete to be able to succeed, or at least could. Recognized and appreciated visual artists are often self motivated, hardworking and determined. They are willing to improve and they can take criticism and feedback from other visual artists. Also, they are usually influenced and inspired by other visual artists and their work. They have an

ability to self reflect on their work and they use it constantly to improve their work.

As I stated above, visual artists and athletes have similarities in their characters. However, in both disciplines there are contents which can also be related to both disciplines. Related concepts can be examined in both disciplines. For example, in visual arts one can study areas such as movement, space, rhythm and creativity. Those same concepts can also be linked into sports and its investigations. Those areas can be investigated from both discipline's own perspective, and examined in how and in what ways those appear. Or, different areas can be investigated in relation to the other discipline. For example, in what ways can space be used effectively both in drawing and basketball? Marshall (2005, 229) notes how it is essential to learning and a critical part of understanding to discover connections and relationships between entities. The connections between these two disciplines have interested me for as long as I have been involved with them. Therefore, it felt natural for me to research interdisciplinarity even more.

Since my own personal experience from the U.S. involved a struggle between two disciplines, I became interested of how this can be used more successfully to one's own benefit. Instead of two disciplines stealing time and effort from each other, they can coexist and balance one another. I am especially interested in the topic how interdisciplinarity can be implemented in middle schools in Finland. How could interdisciplinarity be implemented successfully? What type of actions does it take to create more interdisciplinarity for schools? These are some of the questions I began to think about while investigating the topic of my thesis.

In order to be able to understand interdisciplinarity and its actions at middle schools, it needs to be defined. Interdisciplinarity can be defined in variety of ways. In my thesis, interdisciplinarity is characterized so that it can try to build connections across different disciplines. Also, it can mean creating an undisciplined space which occurs in the gaps between disciplines, or yet trying to go above disciplinary boundaries overall. (Moran 2002, 15.) I can relate to Moran's definition of interdisciplinarity very well. As I mentioned earlier, both art and sports have played a big role in how my identity has shaped throughout the years. I am no longer either an athlete or a visual artist, I am equally both. The borders of those disciplines have merged together and disappeared.

My topic of my thesis is very much relevant to the both fields of art education and physical education. I am currently studying art education at

the Aalto University, School of Arts, Design and Architecture. Juha Varto, Chair of the Department of Art, explains four different characteristics which at least belong to the discipline of art education. Those are 1. Special characteristic of a human, which is linked to philosophy and psychology. 2. The understanding of the social actions, which is linked to sociology. 3. The area of changing interventions, which is close to pedagogics. 4. And, the area of creative actions, which is part of arts based research. (2011, 24.) If I compare my research of interdisciplinarity to those previously mentioned characteristics of art education, I see similarities in my own art education philosophy. With interdisciplinarity education of visual arts and P.E., one can incorporate those different elements into it. For example, in visual arts and physical education, I find it important to understand different characteristics of a human, his/her cultural background, physical and emotional abilities, and social relations and actions. Moreover, I believe that interventions, which can be used to change and broaden our views, are essential in art education. Those can be used to both challenge and question different topics, issues and themes. Additionally, creative actions are very much present in both subjects. Marshall (2005, 230) states how learning and creativity are established in discovering or building connections. As I interpret it, creativity is part of finding different connections between art education and P.E., which is relevant in interdisciplinarity.

Interdisciplinarity is also a significant and current matter in the field of physical education. According to Kirk, Macdonald and O'Sullivan, physical education should be studied roundly from as many significant perspectives as possible. The understanding of physical education can grow if we can apply theories, matters, dilemmas and methods from a variety of disciplines to it. (2006, 95.) In interdisciplinary physical education, one can study the subject from different perspectives. Therefore, one can develop more all around understanding of the concepts and methods used in the subject. Kirk et al. also explain the meaning of physical education. If we want to live well and productively, it is important to be physically fit, and to be familiar with how to interact with other people. This helps us to get things done together that we could not accomplish on our own. (2006, 101.) In physical education, one key element is to practice skills which naturally appear in physical education setting. Those would be for example team work, communication, co-operation, personal engagement, supporting, and social skills.

Even though my true passion is to be an visual arts teacher, I am lucky to be able to put my knowledge of sports and teaching into action at my current job. I am working at the International School of Helsinki as a part-time physical education and health teacher. I have previously worked as a middle

school visual arts teacher in Forssan Keskuskoulu for academic year 2011-2012. And I also have a previous experience from teaching P.E. as a substitute teacher for 2 months. Therefore, when I began teaching at the International School of Helsinki I was fairly unfamiliar with teaching P.E. Even though, I had previous teaching experience and a background as an athlete, it was still difficult at first. I found lesson planning and adjusting to the new school very time consuming. With an athletic background, I was able to relate to lot of different sports. I had general knowledge of teamwork, fair play, some techniques, warm-up drills and games. Also, being an athlete I am constantly following other sports in the media, not just my own sport. My intense interest in various sports helped me understand P.E. as a subject. However, the most difficult part of my new job was to understand the concept and philosophy of an International Baccalaureate school.

International School of Helsinki is an International Baccalaureate school which offers different programmes to different age groups. International Baccalaureate is a non-profit educational organization which offers four different programmes for students aged 3 to 19. The IB was established in 1968 and they are currently working with 3,668 schools in 146 countries. (Official website of International Baccalaureate Organization.) International Baccalaureate Organization has a specific mission statement and it states as follows:

The International Baccalaureate aims to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect. To this end the organization works with schools, governments and international organizations to develop challenging programmes of international education and rigorous assessment. These programmes encourage students across the world to become active, compassionate and lifelong learners who understand that other people, with their differences, can also be right.

(Official website of International Baccalaureate Organization)

International School of Helsinki was first founded in 1963 as a British Preparatory School. In 1996 the school was facilitated in its present location in Ruoholahti. (Official website of International School of Helsinki.) The school has students represented from 43 different nationalities (Peter Welch, personal communication, 23.10.2013). Even IB has four different programmes, International School of Helsinki offers three of those: the first one is called Primary Years Programme (PYP) and it is for students in

kindergarten to grade 5. After PYP, the next programme is called Middle Years Programme (MYP) for students in grades 6-10. The last programme is called the Diploma Programme, which is for students in grades 11-12. (Official website of International School of Helsinki.)

During the academic year 2013-2014, I teach physical education and health for one class. My students are 6th graders, therefore it is their first year of middle school and the MYP. 6th graders have 2x75 minutes of P.E. each week during the fall semester. In the first two months of the spring semester the students have 2x75 minutes of P.E. each week. The last part of the spring semester, they have 75 minutes of P.E. and 75 minutes of health education each week. As I am their physical education and health teacher for the entire academic year it is my responsibility to assess them after each sports or health unit and give them final grades. In my class, I have 13 students, 5 of them are girls and 8 boys. They all represent different nationalities. So far it has been a great experience to work in such a close multicultural community.

In my job as a P.E. teacher at the International School of Helsinki, I teach Middle Years Programme, (MYP). MYP is an International Baccalaureate programme for students aged 11-16 on grades 6-10. Its purpose is to challenge students intellectually and encourage them to draw connections between different subjects and the real world. In MYP, students are encouraged to be able to reflect their thoughts and be creative and critical learners. (Official website of International Baccalaureate Organization.) As a first year teacher at an IB school, it has been difficult at times. My knowledge about the IB school system and programmes was very limited at the beginning of the school year. Previously, I only had experience on working in a Finnish middle school with the Finnish curriculum. Therefore, one of my personal goals for the thesis is to clarify for myself the IB school philosophy.

At an International Baccalaureate school, the academic year is been divided into several units. Depending on the programme and the subject, the units have different contexts, missions and ideas. In physical education, a unit is a period of approximately 4-8 weeks. During one physical education unit there can be one or more different areas of sports investigated. In each unit there must be at least two different criteria in which the students will be assessed on. In P.E. those criteria are: Use of knowledge, movement composition, social skills and personal engagement, and performance. (Official website of International School of Helsinki.) An assessment is a test or an exam, in which the students are assessed based on the criteria used in that particular unit. After the assessment, each student receives a grade on the criteria used. An interdisciplinary unit is a period where two different subjects are

connecting and combining common areas of interest and themes in their learning. Both subjects have their own goals for the unit, and in addition to those, they develop a mutual goal. The key idea is to help students understand subjects more as a whole, instead of compartmentalizing them.

My interest to create an interdisciplinary unit with visual arts and P.E. started as a personal goal for the school year. I had a professional development meeting with the upper school principal of the International School of Helsinki. Every first year teacher at the school has to complete three specific goals for their teaching. Those goals will be monitored, observed and evaluated throughout the academic year. During my meeting with the principal, I raised an interest in bringing my expertise from art education to my job as a P.E. teacher. He suggested me to create an interdisciplinary unit where I could combine both passions: fine arts and sports. Immediately I became interested and excited about it. I was enthusiastic to put my expertise from those two disciplines into action. He also was thrilled and enthusiastic about my idea. According to the MYP, it is highly encouraged to create units where students are able to draw connections between different subjects (Monica Joensuu, personal communication 1.11.2013). Therefore, this personal goal and experience is beneficial for both me and the school. I have a chance to collaborate my two interests and investigate its components deeply. This unit is also one of my personal professional development goals for the school year.

The visual arts teacher at the International School of Helsinki, Monica Joensuu, was very excited about my interest to complete an interdisciplinary unit with art and P.E. She was immediately cooperative and supportive of it. We started our unit planning process in November 2013. We had several meetings where we discussed and brainstormed different topics and ideas for the unit. We talked about both subjects and their individual needs and demands for the unit. During these early meetings we also discussed Monica's previous experiences and knowledge about interdisciplinary units. I was curious to know her earlier experiences, both successful and unsuccessful. Additionally, I wanted to know her specific goals and objectives for the unit, and see if they would match with mine.

Based on my conversations with Monica, I came to the conclusion how there are clear gaps in the area of interdisciplinarity at the International School of Helsinki. One of them is a dilemma between the theory and practice. She explained how usually interdisciplinary units are very one-dimensional. By this she meant how teachers are excited to complete the units but unexcited or too occupied with other matters to discuss them. She mentioned how the

communication between teachers should be more active. She also clarified how the idea behind interdisciplinarity is very good, but unfortunately the execution is often incomplete. She explained how the implementation of the unit is the most challenging part of it. (Monica Joensuu, personal communication 1.11.2013.) Based on her previous experiences and my lack of knowledge, Monica and I agreed our mutual main goal to cooperate and communicate with each other prior, during and after the unit. Through this goal, the unit would be great learning experience for both of us.

With the data gathered from interviews, meetings and my own personal journals and notes, I am trying to answer my main research question: What can interdisciplinarity do when it is being used in art education and physical education? In addition, my sub-questions are: What are the teachers demands to create an interdisciplinary unit, and how is interdisciplinary unit planned, implemented and reflected? And, how does an implementation of an interdisciplinary unit affect on the teaching of it? Through these questions, my goal is to investigate interdisciplinarity and its implementation, and try to improve the current interdisciplinary work at the International School of Helsinki. In general, I am trying to reflect on the execution of the unit and connect it to the development of my own teaching.

In cooperation, Monica Joensuu and I created an interdisciplinary unit with visual arts and P.E. for one 6th grade class at the International School of Helsinki. The class had 13 students between ages 11 and 12. The unit was implemented in January-February 2014, and it lasted 6 weeks. During this unit, the students had 2X75 minutes of art and 2X75 minutes of P.E. each week. I was present in all P.E. classes, and in almost all visual arts classes (minus three classes). Monica attended some of my P.E. classes. In P.E., I was more of a leading teacher and Monica as an observer, and in art she was responsible for the teaching and I was an observer. However, we both agreed that we were allowed to participate on each others lessons and teaching. In this unit, the students had outdoor ice skating during P.E. lessons, and visual arts lessons were held inside the school, in the visual arts class room.

I use action research as the method for my thesis. With the method, I investigate the planning stage, implementation and reflection of an interdisciplinary unit at the International School of Helsinki. My data is a collection of my own personal journals and notes gathered throughout the process of planning, implementing and reflecting. Additionally, I have conducted interviews of two people to support my own thoughts and ideas. These are the Head of School at the International School of Helsinki, Peter

Welch, and the Counselor of Education, Mikko Hartikainen, These interviews are partly used in the literature review. In order for me to have a better understanding of interdisciplinarity, in my literature review I also examine the different definitions of interdisciplinarity, critically analyze the existing literature related to the topic, and reveal the current need for my research. I present examples of written research and articles which introduce interdisciplinary connections of both visual arts and P.E. Moreover, in the story section I explain the entire process in three phases: Planning, implementation, and reflection. I describe and elaborate each phase in detail. Finally, in the end I discuss my findings and analyze my data along with answering my research questions.

METHODS

In this section, I explain the methods I have used in my research, and justify why I have chosen them. I also describe the interdisciplinary unit, how I have collected the data, and what has been the population and setting of the research. Finally, I explain the delimitations and limitations of the research.

Action Research

In my thesis, I decided to use action research as my method of research. Action research is often classified as a qualitative research method (Heikkinen, Rovio & Syrjälä 2007, 36). Eskola & Suoranta (2008, 127) describe how an action research can be defined as a manner of approach, in which the researcher attempts to solve a specific problem in a community, in cooperation with its members. One of my personal goals for the academic year 2013-2014, and this thesis (in collaboration with Monica), is to try to recognize and investigate the stages of planning, implementation and reflection of the interdisciplinary unit. With that information gathered, I want to identify the possible problems in it, and develop the unit further.

The interdisciplinary unit I implemented at the International School of Helsinki had several characteristics of an action research. Heikkinen et al. (2007, 17) describe how usually action research is a development project conducted within a specific time frame, and its purpose is to design and try new courses of action. Every year interdisciplinary units are highly recommended at the International School of Helsinki. However, those are not very popular amongst the teachers.

Classroom action research begins with some kind of a supposition emerging from observation, knowledge and experience, a vision of a life in schools where things could and should be otherwise.

(Stout 2006, 196)

As Stout states, in my action research I want to understand, experience, and observe the interdisciplinary unit and its planning, implementation and reflection. From my communication with several people from the school, there should be more interdisciplinary units during the academic year. According to the MYP coordinator of the school, Minna Tammivuori-Piroux (personal communication, 8.11.2013): An interdisciplinary unit with visual arts and P.E. has never been created at the school before. She has worked there for several years. Therefore, the unit we created was a new course of action and a fresh experience for me, visual arts teacher Monica, and the

school. Also, the unit was planned carefully so it would only last for a certain time, in this case 6 weeks.

Another area of an action research is continuation. The cycle of action research starts when the researcher plans and implements the new pattern of action. After this, the researcher observes and reflects on the implementation during and after the process. In the end, based on the researcher's experiences and reflection on the completion, he/she plans a new and better course of action than the previous one. (Heikkinen et al. 2007, 35.) This cycle of action research is also important in my execution of the interdisciplinary unit. Both myself and Monica agreed on a mutual goal to have an in depth conversations during and after the unit would be completed. In the conversations, the main focus was to carefully examine and reflect on the unit, its advantages and disadvantages. Based on our conclusions, we want to implement the interdisciplinary unit again and complete it in a more successful way in the future.

Because our goal was to be able to develop the unit even more in the future, we both agreed to concentrate on the reflection of it. Also, in action research, the reflection is an essential part of it. Heikkinen et al. (2007, 33) states how in action research, one tries to develop the action by thinking reflectively. In reflection, the researcher distances him/herself from self and sees the action and thinking from a new perspective (Heikkinen et al. 2007, 34). Therefore, my reflection of the unit already started during the planning stage. In our conversations about the unit, I was able to reflect on my existing knowledge and information about visual arts and P.E. The reflection process continued throughout the implementation of the unit and also after it was completed.

Heikkinen et al. (2007, 19) states how action research tries to get practical benefits and usable information. This is what I am also aiming towards with this research. I want to observe carefully and critically the process of constructing an interdisciplinary unit. My mission is to find out as much as I can about the planning, creation and implementation of an interdisciplinary unit and try to offer information, which can be used again by the International School of Helsinki, other teachers and myself.

Finally, I decided to choose action research for my research method for the thesis because of its process continuation. Action research is a process where understanding and interpretation gradually increase (Heikkinen et al. 2007, 36). Therefore, I am aware of the fact that in my implementation of the unit, I cannot get all the information and answers via this thesis. It is only the beginning and a stepping point for me to investigate the area of

interdisciplinarity and modify different variations to its execution. In action research, one is thinking how things have been, and in which direction they are headed (Heikkinen et al. 2007, 36). The investigation of interdisciplinarity in action and the completion of this specific unit, is a long-term process for me, and I want to keep developing it as much as I can in future.

The Unit

In collaboration, Monica and I created an interdisciplinary unit with visual arts and P.E. for one 6th grade class at the International School of Helsinki. The unit was planned and designed in November 2013. The unit started on the second week of January 2014 and lasted 6 weeks. The students had 2X75 minutes of art and 2X75 minutes of P.E. each week.

The name of the unit was *Being Creative*. We selected one mutual key concept for the unit, which was creativity.

Key concepts are big ideas which form the basis of teaching and learning in the MYP. Key concepts engage students in higher order thinking, helping them to connect facts and topics with more complex conceptual understanding. Key concepts provide a focus for transferring knowledge and understanding across disciplines and subject groups.
(Official website of International Baccalaureate Programme)

We chose creativity to our key concept for the unit because it appeared to be a strong common theme for both subjects to investigate. The MYP defines creativity as a process or a capability to create or produce new and innovative things. Often imagination and divergent thoughts are connected to creativity, and it can be present in the process, resolution, or outcome. (Official website of International Baccalaureate Programme.)

Our related concepts for the unit were movement and space for P.E. and expression and innovation for visual arts. Related concepts are for more in depth learning, and often helpful for the investigation of key concepts in a more detailed manner (Official website of International Baccalaureate Programme). We chose these specific related concepts because we wanted to choose terms which can easily be implied with the contents of both subjects.

Our mutual global context for the unit was called personal and cultural expression. "MYP global contexts provide shared starting points for inquiry into what it means to be internationally-minded, framing a curriculum that promotes multilingualism, intercultural understanding and global engagement." (Official website of International Baccalaureate Programme.)

In this global context, we decided to only concentrate on the personal expression section. We decided so, because we wanted to keep this area of the unit as clear as possible, and cultural expression was not our main focus in it. Additionally, we did not want to bring the area of cultural expression to it since it would have expanded the theme too broadly.

According to the MYP, every unit is required to have a unit planner (see appendix 1 & 2). This is a planned, written document which in detail describes the content of the unit. For the unit, we had to plan different statements and questions which can be used as guides during the implementation of the unit. In Statement of Inquiry, we had to create statements for our unit which share our mutual key concept (creativity) and global context (personal and cultural expression). In the Lines of inquiry – section, there are letters F, C and D in the beginning of each question. These statements and questions are presented in the same order in what they should appear in the unit implementation. F is Factual level, which is the beginning stage for the unit. Usually, this is related to defining different terms which are occurring during the unit. C is Conceptual level. In this level the statements and questions need to be connected to our related concepts (expression and innovation for visual arts; movement and space for P.E.). In this level, there are more abstract questions that explore broader meanings and deeper understandings. D is Debatable level, this is the final stage of the unit. With this the teacher challenges the students with debatable questions. This means questions that generate disagreements with multiple perspectives and promote critical and creative thinking. (Minna Tammivuori-Piroux & Monica Joensuu, personal communication 15.11.2013.)

Along with the questions described above, we had to choose a specific statement of inquiry for both subjects. This statement for both art and P.E. was: “Creativity inspires and develops personal expression.” The statement of inquiry’s purpose is to imply what the students are expected to learn during the unit.

Both subjects had their own tasks and activities during lessons, which are described more in detail in the story section of the thesis. Also, both visual arts and P.E. had their own assessment tasks during the unit which were chosen to complement the subject specific curriculum for the whole academic year. The assessment task for P.E. was to compose and perform an ice skating sequence. The students were assessed by using two criteria out of total four P.E. criteria. The first criterion students were assessed on was called movement composition, and it was graded between 0 and 6 points (see appendix 5). The second assessment criterion for P.E. was called social

and personal engagement, and it was graded between 0 and 8 points (see appendix 4). The assessment task for visual arts was to create an art work which would be assessed based on all four assessment criteria. The assessment criteria for visual arts was knowledge and understanding, application, reflection and evaluation, and personal engagement.

Collecting Data

For my thesis and the unit, I had several meetings with Monica and Minna Tammivuori-Piroux. These meetings and planning sessions were valuable data for my thesis. During the meetings with Monica, we concentrated on the planning of the unit, its content, focus, area of interactions, key terms and inquiry questions. The meetings with Minna focused more on the administrative and formal side of the unit, for example creating the right documents and forms for it. All of these meetings were voice recorded.

In addition to the planning meetings, I interviewed two people. From the International School of Helsinki, I interviewed the Head of School, Peter Welch. And, from the Finnish National Board of Education (FNBE), the Counselor of Education, Mikko Hartikainen, With these interviews, I gathered a great deal of information about interdisciplinary units, how they should be executed and documented, why they are recommended by the schools, how they have been implemented previously, and how they have been successful or unsuccessful. Both of these interviews were voice recorded.

I decided to interview Peter Welch since I wanted to hear his point of view about interdisciplinarity and its implementation at the International School of Helsinki. Additionally, I wanted to interview Mikko Hartikainen with the aim to gather information about interdisciplinary programs and units, and how those would possibly be implemented in the new Finnish school curriculum presented in 2016. Both of these interviews I did not use as an actual data in my research, but to support my own thoughts presented in the literature review.

In addition to the planning meetings, I also collected data by keeping a diary. Eskola et al. (2008, 128) mentions how in action research, the researcher is also part of being the subject of the research. Therefore, I decided to collect data and information from my own notes and journals. During the process of teaching the interdisciplinary unit with visual arts and P.E. at the International School of Helsinki, I kept a detailed personal diary with notes. In this journal, I wrote my observations, comments, and thoughts about the unit, and the lessons. In addition, I kept an in-depth explanations and clarifications about the contents of both visual arts and P.E. lessons.

Population and Setting

The group of students who participated in the interdisciplinary unit included 8 boys and 5 girls. They were all 6th graders, in their first year of the Middle Years Programme, and between ages of 11 and 12. All 13 students were from different nationalities. The project took place at the International School of Helsinki, which is located in Ruoholahti district in Helsinki, Finland. The interdisciplinary unit was held in two different places. During P.E. lessons, the students were on the outdoor ice rink located in close proximity to the school. Visual arts lessons were held at the school's visual arts classroom.

The reason why I chose this particular class to my project was because I was their physical and health education teacher during the academic year 2013-2014. I was already familiar to them and they with me. I did not want to complete the teaching project in an unfamiliar environment to me, with unknown school environment. Therefore, the International School of Helsinki seemed like an appropriate choice for the school. Also, since I am in the process of completing my degree in art education, it was an obvious choice for me to choose visual arts as another subject and part of the interdisciplinary unit.

Parameters

In this research, I use a very specific setting and population. The research took place at the International School of Helsinki which is a private school. The group of 6th graders who participated in the interdisciplinary unit all came from different countries, and they were all fairly young (between ages 11 and 12). The interdisciplinary unit lasted a total of 15 lessons. Therefore, the research was conducted in very limited circumstances and a time frame, which also affected on the data I collected.

I chose to collect my data solely based on my own observations and notes from meetings and lessons, and reflections from Monica. Therefore, I deliberately chose not to interview the 6th grade students who participated in the unit. I decided this, because in my research I wanted to concentrate specifically on the teacher perspectives, not the students. Of course, the students' voices and opinions were heard during the implementation of the unit, but I did not conduct interviews of them. In my opinion, the data I collected from my personal journals and notes supported my research questions, and the viewpoint I had chosen for my research. For that reason, student interviews were not part of my research.

In addition to my decision not to interview the students, I also chose not to concentrate on examining the philosophy of an IB school. The goals and

objectives of IB were present throughout the entire process of planning, implementing and reflecting on the interdisciplinary unit, but I did not want to draw too much attention to that. The purpose of my research was to examine planning, implementing, and reflecting on an interdisciplinary unit which happened at an IB school. However, I wanted to research this specifically from the teachers' perception, not the IB's.

Besides leaving out the IB's perspective, another topic I specifically chose not to concentrate on was the actual content of the interdisciplinary unit. The focus of my research was on what does interdisciplinary do, and what the teachers' demands of creating an interdisciplinary unit are. Therefore, I deliberately decided not to look into and examine closely how the content of the unit, creativity, was put into action.

Yet, a different restraint in this research was my personal biases. As I stated earlier, I have a strong passion for both subjects, visual arts and P.E., due to my own personal experience on these. Therefore, since I have truly experienced the advantages of being an interdisciplinary person, I blindly believe it would benefit anyone. However, I cannot be sure of this. Therefore, through this research, I do not try to show evidence that I am right, but to articulate my experiences and findings of teaching interdisciplinarity.

LITERATURE REVIEW

In the literature review, I present and analyze critically the existing literature related to the topic of my thesis. I also discuss my different findings which are connected to the concept of interdisciplinarity. I define the key concepts and ideas which are relevant to my subject matter, and clarify some definitions which are important to the topic of my thesis. Main topics include interdisciplinarity, interdisciplinarity in art education, interdisciplinarity in physical education, and interdisciplinarity with art and physical education. The main purpose of my literature review is to reveal possible gaps and development suggestions in the fields of art education and physical education. In the end, I conclude my literature review and discuss the possible strengths and weaknesses I discovered, and evaluate and critique the presented literature.

Interdisciplinarity

It is significant to fully define the idea of interdisciplinarity as I investigate the concept of it. Interdisciplinarity can be described and identified in different ways. I have chosen three different definitions which I find to be somehow relevant to my experience of the interdisciplinary unit.

One basic definition was presented by Brent Wilson (1995) who said that interdisciplinary education can be defined as "making connections." On the surface, Wilson's definition seems inspiring and liberating, However, connections can be made among a number of factors, by a variety of individuals, leading to confusion and hesitation among some teachers.
(Ulbricht 1998, 14)

As Ulbricht states above, connections can be made in many different ways and amongst different people. Therefore, I agree with Ulbricht's statement how identifying interdisciplinarity as "making connections" can confuse some teachers. Wilson's definition is simply too shallow. As a visual arts and P.E. teacher, I can relate to the confusion and hesitation which appears when discussing about interdisciplinarity. Both of those subjects include many stages of information, with many large concepts. Therefore, interdisciplinary can mean much more than just simply making connections. Even if it is important to establish connections between various subjects, in interdisciplinarity there should also be relationships to some conceptual themes within those subjects. Leiviskä presents a more detailed definition for interdisciplinarity than Wilson.

Interdisciplinary studies may be defined as a process of answering a question, solving a problem, or addressing a topic that is too broad or complex to be dealt with adequately by a single discipline or profession.
(Leiviskä 2001, 11)

With this definition, Leiviskä describes the concept of interdisciplinarity as a process with multiple facets and options. This description is more dimensional than Wilson's. She describes how within the concept of interdisciplinarity there are many layers, possibilities and approaches to address specific topics in different disciplines. Due to the complexity and size of some topics, some need to be addressed with the collaboration of more than one discipline. As I agree with Leiviskä's definition, I would add another dimension to it. In addition to dealing a topic which is too broad for solely one discipline, I would consider any large topic (related to more than one discipline) to reveal more perspectives and viewpoints when it is being investigated in multiple disciplines. Rather than thinking about the broadness of certain topics, one should consider their possible characters and sections, which interdisciplinary approach can elaborate.

Furthermore, Piaget's definition of interdisciplinarity is similar to Leiviskä's, and also appropriate in relation to my experience.

Interdisciplinary: A knowledge view and curriculum approach that consciously applies methodology and language from more than one discipline to examine a central theme, issue, problem, topic, or experience (Piaget 1972).
(McGehee 2001, 380-381)

Perhaps Piaget's definition of interdisciplinarity needs to be updated. However, it also gives a much more detailed description than Wilson's. It suggests similar type of approach as Leiviskä. Big concepts, themes, and topics are investigated through multiple disciplines. Both Piaget's and Leiviskä's definitions suit well with my experimentation of the interdisciplinary unit. The concepts and topics I focused on during the art and P.E. lessons were carefully chosen to be broad and complex. So with the help from both disciplines, those concepts could be comprehended more thoroughly. And, the approach I had was very much similar to Leiviskä's method of answering questions and solving problems. Through Piaget's and Leiviskä's definitions, I see interdisciplinarity as a tool used by teachers and educators to help their students to have an in depth understanding of a

specific subject or concept. At its best, interdisciplinarity covers a wide area of a broad topic, and crosses borders of a number of different disciplines.

Piaget's definition of interdisciplinarity was written in 1972. Even it offers a good framework, and respectable perspective to interdisciplinary approach, it may possibly need to be restructured. Marshall's (2005, 233) characterization of interdisciplinarity has a more precise statement: "...different disciplines have their own distinct elements and seeing these particularities in relationship to those of other disciplines puts them in high relief." Marshall's definition presents slightly more efficient implication than Piaget's. In my opinion, Marshall proposes that one discipline's relationship to another can uplift the distinctiveness of both. With this occurrence, the common themes and topics of separate disciplines are able to strengthen and support one another.

Interdisciplinarity in Education

As I examined Leiviskä's, Piaget's, and Marshall's definitions of interdisciplinarity, it is also important to clarify why there is need for interdisciplinarity in education. As I have stated in the introduction, in my life as an athlete and a visual artist, I have experienced the advantages of interdisciplinarity. According to Ulbricht, there is an explanation for the need of interdisciplinarity, especially in education: "With increasing specialization in each discipline, and the decontextualization of knowledge, the need for an interdisciplinary educational perspective has reemerged." (Ulbricht 1998, 14.) Not only it is significant to be able to identify the need for interdisciplinarity in education, but also clarify the reasons behind it. "If the aim of education is to fully activate the cognitive potential of the learner, ways have to be found to integrate knowledge from many subjects to achieve a fuller understanding than would be provided by content treated in isolation." (Efland 2002, 103.) I agree with Efland's statement about the importance of integrating knowledge from various subjects in order to have more understanding of it. As I have personally experienced the advantages of interdisciplinary education while studying in the U.S., I can say that it has helped me with the more full understanding of both visual arts and sports. Also, Leiviskä (2001, 11) explain the effects of interdisciplinarity in education. "Interdisciplinary studies draw on disciplinary perspectives and integrate their insights through construction of a more comprehensive perspective (Klein and Newell 1996)." I also agree with this statement. When one discipline is not enough to explain or define a concept, integration with other disciplines is needed. Therefore, it is possible that a better understanding of these disciplines or subjects is being created.

Problems of Interdisciplinary Teaching

According to McGehee (2001, 380), interdisciplinary approaches to teaching raise some difficulties and challenges. Moreover, some problems might occur in the implementation of interdisciplinary units. "In general, Schroth, et al. (1994) claimed that these units present a complex challenge to teachers, because teachers must do more than share and coordinate content." (McGehee 2001, 380.) In my thesis, I am trying to investigate the implementation of interdisciplinary units at middle school, and what types of challenges teachers face along the process of planning, execution, and reflection of it. During this process, I have already done much more than just shared and organized content. Hours of planning and investigating the curriculum of both subjects, designing the lesson contents, tasks and assessments, and grading criteria definitely offer a great challenge. McGehee (2001, 380) explains that when teachers are designing interdisciplinary teaching methods, they often pick central topics and create multiple concepts from content in the discipline areas. To me, this sounds too complex and complicated. Would this type of approach confuse both teachers and the students? I have both experienced and taught interdisciplinarity. Therefore, I see anything too complicated as an unpleasant approach to both teaching and learning. McGehee explains two problems of interdisciplinary units which were presented by Jacobs (1989):

Jacobs (1989) identified two problems in content selection. The "Potpourri Problem" is the tendency to make an interdisciplinary unit a sampling of knowledge from each discipline. Teachers may feel challenged when a particular theme requires them to contrive material that seems connected to it. Also the interdisciplinary approach can force teachers from their comfort zones as they go against traditional practices of prescribed content sequences often dictated by the textbook. This discomfort would in part come from what Jacobs described as the "Polarity Problem," caused by teachers' seeing interdisciplinary study and disciplinary study as an either/or polarity.
(McGehee 2001, 380)

With these two problems presented, McGehee summarizes the dilemmas teachers face in the content selection of interdisciplinary units. The Potpourri Problem occurs when interdisciplinary unit has examples of information from each discipline. Teachers have to collect all the needed materials to their lessons. The Polarity Problem, however, occurs when teachers decide to go against conventional methods and not to follow traditional textbook contents in their units. This makes the teachers step out

of their comfortable teaching methods. I see both of these problems occurring during the planning stage of interdisciplinary units. I can relate especially, to the Potpourri Problem. I see myself being challenged with gathering the information from many disciplines. I can see this problem taking place especially amongst middle school teachers who are usually experts of only one subject. When they have to gather information from other disciplines and find the connections in those, I believe it can be overwhelming and exhausting for some of the teachers.

Another possible problem in interdisciplinary teaching is when teachers decide to choose a too broad concept. According to Coudriet (2013, 60): "Another concern is that interdisciplinary connections may be broad connections, sometimes too broad, and the depth with which content from each discipline is presented is compromised." As Coudriet posit, when the investigated concept is too broad, it can affect on how deeply it can be incorporated into the teaching. According to Mikko Hartikainen: "In interdisciplinary learning the main focus and basis should be in the students lives and own experiences." (Mikko Hartikainen, personal communication 5.12.2013.) In my opinion, one of the hardest parts is actually choosing the content of the interdisciplinary teaching. Teachers should be willing and ready to compress their subject content in such ways which does not decrease the depth of it. As an example, the concept of two subjects in interdisciplinary approach should be narrowed down in a way, which within the given time frame, allows necessary connections to be made.

When discussing about interdisciplinarity, its relation to education, and the problems it has, it is also important to clarify different terminology which occurs in relation to it. Some concepts related to interdisciplinarity are integration, cross-disciplinary, transdisciplinary, and multidisciplinary.

Integration

In the same category with interdisciplinarity, integration is probably the most commonly appearing term. Oxford Dictionaries define the verb 'to integrate' as: "Combine (one thing) with another to form a whole." This definition is very similar to the idea of interdisciplinarity when a concept is being investigated through more than one discipline. However, according to the definition from Oxford Dictionaries, in integration there is only one thing which is combined with another thing to create something complete. I see integration as a collaboration of two disciplines, where one subject is being integrated with another subject. Therefore, the movement of discipline transferring towards another discipline only creates movement to one direction. Yet, in interdisciplinarity, there can be two or more of different

things, all moving from one discipline to another, and making connections while crossing discipline borders.

Another definition to integration is presented by Coudriet (2013, 59): “Integrated teaching is slightly more sophisticated in nature, often thematic and inquiry-based.” As Coudriet states, in integration the teaching is based on posing questions and investigating broad concepts through those. This definition is similar to interdisciplinarity. Also in interdisciplinary teaching, the approach is based on finding connections in big themes and asking relevant questions.

Cross-disciplinarity

Together with the concept of integration, cross-disciplinarity is also a recurring term when discussing interdisciplinarity. According to Marshall (2005, 232), cross-disciplinary studies are associated with the transfer of ideas.

Cross-disciplinary study promotes transfer as it involves cross-context applications of knowledge and ideas. Transfer, usually associated with learning, has implications for creativity. When ideas are transferred or applied from one area to another, recoding occurs and matters are re-conceptualized.
(Marshall 2005, 232)

I see Marshall’s idea of cross-disciplinary studies as a flow of ideas and concepts, which move from one discipline to another. In my opinion, in cross-disciplinarity it is important to recognize this action of movement and its outcome. One discipline crosses the line of another discipline and formulates new perspectives for both disciplines. However, in interdisciplinarity and integration those ideas and concepts are being merged and united together, rather than seeing separately.

Transdisciplinarity

Transdisciplinarity is yet another term often associated with interdisciplinarity. Huyn (2011, 8) argue: “Transdisciplinarity is a principle for unity of knowledge beyond disciplines, and its approach implies full interaction between, among, and beyond disciplines from a real-life problem-based perspective.” As this definition implies, also in transdisciplinarity one moves and thinks from one discipline to another without establishing the edges of each discipline. Therefore transdisciplinarity is similar to the concept of cross-disciplinarity. Both of these concepts suggest that implying information from many disciplines, one

can take in knowledge through different ideas, themes, concepts and problems, and interact with them.

Multidisciplinarity

Oxford Dictionaries explain multidisciplinary as: “Combining or involving several academic disciplines or professional specializations in an approach to a topic or problem.” This definition is also close to interdisciplinarity and integration. However, as I see it, in multidisciplinary the topic, concept or dilemma is being investigated with several individuals, all representing different disciplines. According to Moran (2002, 16), multidisciplinary can be described as: “...the simple juxtaposition of two or more disciplines...” Moran’s description refers to a union of disciplines that all occur simultaneously. I see those disciplines not only supporting each other, but also completing one another. These disciplines involved, are co-existing. They offer a valid and new point of views to a topic or theme, which would not be as complete without it.

Along with the term interdisciplinarity, all of these terms mentioned (integration, cross-disciplinarity, transdisciplinarity, and multidisciplinary) offer a slightly different point of view to the concept of interdisciplinarity. However, each definition has its own definition and explanation, but in my opinion, they all have the same basic concept. All of the terms mentioned represent the idea of allying, not juxtaposing. Many concepts and themes could be explored by investigating those from many angles. Therefore, in this thesis, I use these different terms in different contexts, since in my opinion, they all have the same fundamental meaning: to investigate and explore concepts from the perspectives of multiple disciplines.

Interdisciplinarity in Art Education

For a long time, art education has been a subject treated in isolation, apart from other subjects. Efland (2002, 9) clarifies this claim: “For many generations, art educators strove for subject-matter autonomy and wanted to teach art for its own sake in isolation from other subjects constituting the culture.” However, nowadays when interdisciplinarity occurs in art education, some researchers are questioning if it is relevant to even recognize it. According to Ulbricht (1998, 14), visual arts is already an interdisciplinary subject in itself, so why anything should be changed in the teaching of it. Ulbricht’s statement is quite out of date when written in 1998. However, also Efland points out a similar observation to Ulbricht:

Efland (2002) finds art to be a propitious, learning-friendly hub for integrated learning because art is the location where subjective and cultural interpretation (meaning-making) are most openly celebrated and practiced.
(Marshall 2005, 228)

As Efland claims above, visual arts does seem to have good characteristics to be the center for integrated learning. Visual art as a subject is so wide and multilayered, that it inevitably has a lot of information incorporated in it from various of other subjects or disciplines. Moreover, Efland is not the only one suggesting that visual arts should be in the center of all the subjects. Ulbricht (1998, 16) also encourages that interdisciplinary art education should highlight art's one of a kind perspective. He also argues, not only the uniqueness of art should be emphasized, but it also should be placed in the middle of all the other subjects:

Instead of being a handmaiden, Eddy (1974) suggests that art could and should be the center of the curriculum since making art incorporates knowledge from many disciplines and art is the basis of much historical knowledge.
(Ulbricht 1998, 16)

I disagree with both Efland's and Ulbricht's points about setting art in the center of the curriculum. One subject does not need to be the center for all the other ones. Visual arts is, and should be treated as important to the curriculum as any other subject. However, I do not disagree with visual arts being a good subject for interdisciplinary learning. It does indeed, has a possibility to offer many good perspectives to other subjects such as math, physics, biology, and history. Yet, it is not relevant to identify one subject as the core for interdisciplinary. More important is to find accurate connections between different disciplines and try to smoothen the edges of them. This, at its best, can be a great way to illustrate big concepts which not only occur in interdisciplinarity, but also in everyday life.

As I see visual arts being a good subject for interdisciplinary learning, there is an approach within the discipline which is called internal integration. Internal integration in art education means that the same artwork is being created by approaching it from many different viewpoints which are naturally occurring in visual arts. Those approaches can be for example fine arts, design, architecture or media. In internal integration, the topics and themes can have new meanings when those are connected to the learning approach, not being learnt as separate phenomena. (Laitinen, official website of Finnish National Board of Education.) In my opinion, internal integration in art education is an excellent way of emphasizing the internal aspects of visual

art in an interdisciplinary manner. It can offer new and uncommon approaches on how to examine different art-related topics and themes, and provide new learning experiences for students.

As internal integration occurs in art education, visual arts is naturally a very appropriate subject for interdisciplinary learning. Therefore, strong subject centered compartmentalization and isolation should be avoided. According to Efland (2002, 99), one form of compartmentalization can be visible when art is taught as it was a self-directed subject, not related to other subjects. This type of compartmentalization fights against the nature of visual arts. Since interdisciplinarity seems to be, perhaps naturally, present in the field of art education, why not fully take advantage of it. Efland (2002, 9) points out: "The emphasis on context is particularly crucial in learning about art, for works of art cannot be fully understood apart from the social and cultural context in which they were created." Therefore, I believe teaching visual arts in an interdisciplinary manner is an effective way for a more all-around and full understanding of the subjects. According to Efland (2002, 89): "But since works of art reflect their social environment, they have a built-in potential to connect domains of knowledge that otherwise would be isolated from each other." Efland's claim especially refers to art education where a great focus would be in the showing and viewing of art works to students. However, regardless of what the interdisciplinary approach to art education is, it still ultimately prevents subject separation. And as Efland states, when art education is being treated with an interdisciplinary approach, we are not allowing strong subject isolation to happen.

When learning occurs in an interdisciplinary context in art education, it allows us to understand big concepts and their relationships to the world we are living in. According to Efland (2002, 77): "...the purpose of art education is not to induct individuals into the world of the professional fine arts community. Rather, its purpose is to enable individuals to find meaning in the world of art for life in the everyday world." With this argument, Efland suggests that students could possibly find and make connections, with visual arts and other disciplines, on their own. Therefore, this claim Efland poses is very much possible in interdisciplinary learning. He also suggests that "...knowledge becomes meaningful to the extent that it is linked to the social or cultural context or situation in which it arises." (Efland 2002, 51.) When students are offered ways and methods how to apply information from one discipline to another, they can themselves be the explorers. Therefore, when connecting art education with several different contexts and disciplines, it supports learning where students can find and make meanings in their real world situations.

Interdisciplinarity in Physical Education

Similar to art education, physical education can also be taught in an interdisciplinary manner. Physical education is a respected subject, and appropriate for interdisciplinary learning as any other subject. According to Placek & O'Sullivan (1997, 21): "...topics from language arts, math, science, geography, history, social studies, art, health, music, and biology can be taught in physical education classes." Moreover, most likely all the subjects can fit well with physical education in interdisciplinary learning. The actual issue is to try to find out best ways how to accomplish interdisciplinary techniques effectively. Placek & O'Sullivan have two practical suggestions:

For example, two favorite suggestions are teaching games and dances of other time periods or cultures (e.g., colonial America) in social studies, or reading and writing about sports topics in language arts.

(Placek & O'Sullivan, 1997, 21)

Both of these suggestions are accurate, and most likely teachers are capable to implement those in their lessons. However, both of the suggestions are representing interdisciplinarity approach which takes place in a classroom, not in physical education setting. In my opinion, the true interdisciplinarity occurs when broad topics and contents are being addressed in all subject lessons which are involved in interdisciplinarity. Therefore, as Placek & O'Sullivan suggests that reading sports articles in language arts would be an approach for interdisciplinary learning, what type of content would the physical education lessons have then? I can relate to Placek & O'Sullivan's ideas, but I see interdisciplinarity being much more than just bringing a topic from one subject to another subject's classroom. As I state in the introduction and background section of my thesis, Moran's description of interdisciplinarity fits in with my idea of it. Interdisciplinarity can mean creating an undisciplined space which occurs in the gaps between disciplines, or yet trying to go above disciplinary boundaries overall (Moran 2002, 15). This definition fits well with my thought on what interdisciplinarity should be. In my opinion, interdisciplinarity should not be applied through emphasizing differences, and then trying to find common factors between disciplines. Rather, it should be used as a method to try to remove all the borders of each discipline to make every discipline somehow important in relation to another.

In addition to the definition of interdisciplinarity in physical education, P.E. can have different interdisciplinary models or approaches. Cone et al. (2009) present three models: the connected model, the shared model, and the partnership model. The connected model appears when different skills and

concepts are the main focus of the lessons, and topics from other subjects are implemented in those. This model also allows teachers to plan their lessons independently. In the shared model students can understand that topics and contents can go beyond the subject area borders. In this model, two subjects are joined through a mutual concept and a time line, which the teachers have agreed on. In the partnership model teachers are typically co-teaching, and the learning occurs at the same time in all subject areas. This model usually takes the most planning time. (Cone et al. 2009.) In our interdisciplinary unit, Monica and I used the shared model. Through our mutual key concept of the unit we tried to elaborate how creativity is present in both subjects. Additionally, we had previously agreed that our unit would occur simultaneously in both subjects, with the shared time line.

Elliot suggests two advantages which can take place in interdisciplinary physical education. These affect on both working community and the teaching.

Two other advantages of using this interdisciplinary approach are: an increased visibility for physical educators as 'team players,' thus, contributing to a more secure place when budget constraints require reordering priorities, and an increased opportunity to promote diversity and acceptance through the integrative lesson.
(Elliot 2003, 19)

Firstly, as Elliot describes, creating interdisciplinarity lessons in physical education can benefit the working environment of the teachers. When they can be seen as co-operative team players in the teaching community, this can give them a better reputation amongst the other teachers. Yet, as Elliot stated, this can be beneficial when reordering of different equipment for each subject takes place. Secondly, interdisciplinarity promotes learning which can endorse diversity and encourage students for acceptance. In addition, Elliot (2003, 19) describes two types of integration in physical education lessons. Those are internal and external integration.

Internal Integration

Internal integration means addressing concepts that are relevant and already present in physical education. According to Placek & O'Sullivan (1997, 20): "...concepts, social interaction/personal development skills, or thinking skills are consciously selected and specifically taught as a significant part of the curriculum." This is very similar to Efland's point about visual arts, and how it is a good center for interdisciplinary learning. Playing different sports, fun games and activities, practicing teamwork, doing exercises in pairs, and

operating with each other, are built-in and natural characteristics of physical education. Therefore, when both visual arts and physical education have so many good characteristics within them that can promote interdisciplinary learning, those can offer great opportunities for teachers. The tools for interdisciplinarity already exist within the subjects, it is up to the teachers to decide how to use them effectively. Even internal integration is usually present in physical education lessons, it can still be highlighted amongst the students. This can make the students more aware of all the various concepts that naturally occur in physical education context.

External Integration

Elliot (2003, 19) also explains the concept of external integration: “External integration refers to the use of the physical education setting to teach and reinforce concepts from other core content areas.” This is different from internal integration. In external integration, concepts that would not naturally occur, are brought into the physical education setting. Elliot (2003, 19) also suggests that there is an increasing need for external integration.

Integrating concepts of math, language, arts, science and social studies into physical education has been identified as a viable means to teach children (Burton, 1977), the main benefit being the reinforcement of classroom learning in the physical education settings.
(Elliot 2003, 19)

As Elliot states above, integrating different subjects into physical education lessons, offers practical resources. It allows a much more in depth contents to be addressed during physical education lessons. Simultaneously, it can offer appropriate methods for teaching. It can strengthen and support the education that would otherwise happen in a simple classroom setting. This can give some lessons more value and interest, when broad concepts are being included into physical education activities.

Elliot explains the concepts of internal and external integration in physical education. Moreover, according to Placek & O’Sullivan, when physical education is being integrated with other subjects, it can be thought in two ways:

The first, integrating physical education content into other subjects, requires us to think about what physical education topics might be appropriate to link to other subject matters. The second, integration of other subjects

into physical education, uses the physical education setting to teach concepts from subjects such as math, language arts, or social studies.
(Placek & O'Sullivan 1997, 21)

As Placek & O'Sullivan discuss these two approaches to integration in physical education, I think these are too narrow interpretations. In my opinion, it suggests only two ways how to implement integration of other subjects into physical education. In the first approach the focus of the content is in physical education, and in the second one it is in all the other subjects (Placek & O'Sullivan, 1997, 21). However, is it possible to have an approach where all the subjects involved in the integration are being addressed equally and from each subject's perspective, and regardless of the setting they are in? This would offer a setting where all the subjects would be evenly examined using the same method in spite of the subject.

Possible Challenges

As middle school students spend most of their hours at school by sitting down in classrooms, physical education is one subject where they can truly be physically active. Therefore, when planning an interdisciplinary lesson, it is important that it is implemented efficiently and not wasting important time for activities. According to Elliot (2003, 20): "The physical educator needs to plan effectively to ensure that the interdisciplinary focus of the lesson does not result in significant decrease in physical activity time." However, in reality, this can be surprisingly challenging for teachers. When teachers try to include more than one subject content into interdisciplinary lessons, it can be demanding to try to keep the lesson focus on physical activities. Elliot (2003, 19) also claims that it is challenging to create an interdisciplinary lesson that is both efficient, and maintains highest physical activity time. According to Peter Welch: "P.E. is literally the time when people leave the classroom, they get into a big space, and they run around. If you look at the way children have developed, it is really quite wrong that school has made them sit down for so long." (Peter Welch, personal communication 7.2.2014.) With this notion, physical education is the only subject in the curriculum which has its purpose of offering physical activity time for the students. It is the teachers who ultimately design and implement the interdisciplinary units or lessons. Therefore, it is their job to assure that the physical activity time stays at its maximum regardless of the interdisciplinary characters which are involved in the lessons. Even this can be very challenging, I believe it is achievable.

Interdisciplinarity with Art and Physical Education

Interdisciplinarity can at times occur simultaneously with visual arts and physical education/sports. Sometimes it can happen simply naturally, and sometimes deliberately and carefully planned, like in interdisciplinary units.

Natural Connections with Art and Sports

My interdisciplinary studying experience from the U.S. was a combination of balancing with visual arts and sports, and trying to give as much energy and dedication as I could to both disciplines. During that time, and I still do, had a love-hate relationship with these two fields. Time devoted to art, was away from basketball, and vice versa. However, it was not until later on when I realized the true benefits of being an interdisciplinary person. Occasionally, the relationship between art and sports can be surprisingly close. Matheson & Chhangur speak about art and sport, and their relationship to each other:

Art and sport: the two do not sit easily together. Rather, it's the opposite: they suggest either a non-relationship-meaning the terms have simply nothing to do with each other-or they suggest an incongruous pairing-they point in different or opposite directions. Yet, art has long been present in sport, and many artworks have been inspired by, or at least allude to, sporting matters.

(Matheson & Chhangur 2010, 31)

With this statement, Matheson & Chhangur present a fascinating observation. Art and sports would after all be closer to each other than was expected. An example of Matheson & Chhangur's point about how art has been present in sports, would be an extremely followed and traditional sporting event, the Olympics. The Olympics in 1912 were held in Stockholm, Sweden. According to Matheson & Chhangur (2010, 31) this event included: "...competitions for music, literature, painting, sculpture and architecture alongside athletic demonstrations." In this single event, not only the best athletes in the world were trying to compete against each other, but also the artists from several different fields were fighting to win a gold medal. Therefore, in that occasion, art and sports were competing in the same contest, not against one another of course, but in cooperation. Possibly those two were respectfully noticed as equal?

As Matheson & Chhangur argue above, also artworks might have been inspired by sports and sporting events. When discussing about visual arts and its possible connections to physicality or sports, one example is sculpture work, especially the ones with human resemblance. Those are a combination of physicality and artistic creation. Marlett & Gordon argue

about the importance of sculptures in both art's and physical education's perspective:

In Athenian society, sculpture was a powerful form of communication. As a text, sculpture can incorporate the physical, emotional, and social aspects of PE, as well as aspects of proportion, aesthetics, and form in relation to physical activity. As an art form, sculpture integrates the dimensions that are often lacking in PE: sight, touch, imagination, and analysis beyond physical skills. Sculpture cannot take the place of quality instruction, but it can significantly enrich the PE environment. (Marlett & Gordon 2004, 236)

With this observation, Marlett & Gordon propose the inevitable connection between visual arts and sports which can be found in sculpture work. Not only is physical activity present during the creation process of the sculpture, but also in the final product. In the making of the sculpture one uses body power, strength and muscles, together with one's artistic vision. Moreover, as Marlett & Gordon states, in a sculpture one can see proportions and shapes and how those are conveyed through physical action. I agree with Marlett & Gordon's opinion how sculpture work can integrate aspects from physical education and visual arts. It does, indeed, seem to be an appropriate connector between physical education and visual arts. It possesses qualities from both disciplines and offers natural and suitable ground for interdisciplinarity. Characteristics from both physical education and visual arts can be celebrated and complemented.

Sculpting is not the only visual arts form in which physicality and physical engagement of the body is needed. In many other art forms one must be able to control their physical strength in order to create a piece of work. Another example of this physical control would be pottery. However, Placek & O'Sullivan bring up an interesting observation about the interdisciplinary connection between visual arts and physical education in pottery:

While it may be laudable that curriculum writers find physical education worthy of inclusion in subjects such as environmental education, building construction, and pottery, lack of knowledge about physical education goals is very obvious. For example, physical education's contribution to the pottery unit is the physical manipulation of the clay (Counts, 1976)!
(Placek & O'Sullivan, 1997, 21)

In my opinion, with this argument Placek & O'Sullivan initiate that the lack of knowledge in physical education goals leads to uninteresting and characterless solutions in the implementation of interdisciplinarity. It is obvious, that when handling clay in a pottery unit, physical treatment of the material will be incorporated. Physical handling of the clay is a natural procedure in pottery. However, if art and physical education are being introduced in interdisciplinarity, just simply emphasizing art making's physicality perhaps does not seem to be enough. Yet again, interdisciplinary connections with visual arts and physical education should be introduced with not obvious, but unexpected connections. Furthermore, Marshall clarifies this: "Lakoff and Johnson (1980) believe that new insights are generated and new learning occurs when the boundaries of conventional categorization are broken." (Marshall 2005, 232.) Therefore, inventing new and unpredictable approaches to interdisciplinarity with visual art and physical education can make the connections more meaningful and valuable.

Interdisciplinary Connections with Visual Arts and Physical Education

There are several ways of how to create interdisciplinary connections with visual arts and physical education lessons. Altman & Lehr have listed six practical examples of how to incorporate interdisciplinarity with visual arts and P.E.: Firstly, Altman & Lehr suggest physical education teachers to use a bulletin board to post images, copies of paintings, and pictures which can indicate and raise questions about sports, sports history, different moral problems, or issues. Second method would be to incorporate various of examples of art into a P.E. technique and style lesson. This could occur by asking students to interpret an artistic style through motion or other physical activity. Thirdly, Altman & Lehr recommend students to create collages by using different sports magazines. Fourth method suggested would be to support students to plan, design and create all the awards for a school's sports day. A fifth way of incorporating art and P.E. in an interdisciplinary manner, would be to ask the students to investigate photography by taking photographs of sporting events and athletes. Finally, Altman & Lehr propose that students could design and create their own logo for their team as a way to investigate and study artistic aspects of it. (2003, 17.) All of these examples Altman & Lehr propose, are very simple and useful ways of linking areas and approaches from visual arts to P.E., and vice versa. However, the connections they propose, are only involved on a very practical level. It is lacking methods which would also make the students understand the bigger linkages with the two disciplines. In my opinion, all of the six methods they pose seem to be appropriate starting points for a more in depth realization. They are excellent for perhaps the beginning stage of an interdisciplinary

unit with visual arts and P.E., and could be used as examples to illustrate the multiple ways of making connections. Then again, in my opinion, true interdisciplinary occurs when big mutual concepts and themes are being equally incorporated into the lesson contents of both subjects.

Conclusion

For years now, intredisciplinarity has been present in the fields of art education and physical education. Many researchers have investigated the implementation of interdisciplinary and possible ways how to incorporate that to teaching. Interdisciplinarity occurs naturally and internally in both disciplines: art education and physical education, since both of those subjects have characteristics which promotes interdisciplinary. In art education those would be art's built-in components such as social, historical and emotional contexts which can be incorporated in lessons. Also, physical education has its own distinguished attributes that endorse interdisciplinary. Those would be social interactions, teamwork, fair play, supporting, and assisting one another.

Even though both art education and physical education have interdisciplinary characters, it is still possible to integrate areas and concepts from other disciplines into those subjects. At its best, interdisciplinary teaching enhances the education and the understanding of the learning. Cone et al. (2009) elaborate this: "As educators, the kinds of experiences we offer students influence the kinds of skills and knowledge they develop. Making those learning experiences relevant, meaningful, and transferable to future learning is the goal of interdisciplinary teaching." When interdisciplinary teaching has specific objectives which are well known by the teachers, it can offer important, applicable, and convenient learning experiences for the students. Cone et al. (2009) raise an important observation as they highlight the significance of learning experiences now, and how those should be transferable to the future as well. With this remark, Cone et al. present a challenge to the interdisciplinary teachers, and encourage them to truly offer learning experiences which can benefit the students out from school and in the real life situations. This might be something that teachers can never truly know if they have succeeded in, but that does not stop us from trying.

In my opinion, the ideal interdisciplinary unit is well planned, implemented and reflected with the teachers involved. Also, ideally the unit would not offer stressful or time consuming problems for the teachers, and they would be interested and invested in the process in a positive way. Also, a perfect interdisciplinary unit would be implemented in a way that would value all the subjects equally, and respect the subject specific contents. And, also

preferably, it would offer teaching and learning experiences for all the parties involved.

STORY

In this section, I explain in detail what I have experienced at the International School of Helsinki during the planning, implementation and reflection of the interdisciplinary unit. The first part of the project was the planning section, which included 4 planning sessions in November, 2013. The second part of the project was the implementation of the interdisciplinary unit. This included a total of 15 lessons; 9 visual arts lessons and 6 P.E. lessons. All 9 visual arts lessons lasted 75 minutes each. 5 P.E. lessons lasted 75 minutes and one lesson lasted 45 minutes. The third phase of the project was the reflection of the whole process. During this phase, I had several meetings with Monica which occurred during and after the unit.

Phase 1. The Planning of the Interdisciplinary Unit

The planning of the interdisciplinary unit started in November 2013. I had a total of 4 meetings with Monica. During those meetings we planned and discussed our interdisciplinary unit, and its content. In 3 of those 4 meetings, we had the MYP Coordinator, Minna Tammivuori-Piroux, present. All of our meetings were voice recorded. Below I have transcribed the content of our meetings, and paraphrased all the essential information related to my thesis.

1st meeting

Friday 8.11.2013, duration 60 minutes

Present: Myself, Monica Joensuu and Minna Tammivuori-Piroux

In the beginning of our first planning meeting, Monica and I decided how we would want to approach interdisciplinarity. We agreed that the best way would be to choose a mutual concept which would then be investigated in both subjects. During this meeting, Minna offered great expertise from administrative side. She helped us in the unit planning, how to write it correctly in the unit planning program (Managebac), and offered information about the rules and objectives regarding the MYP. Both Monica and I completed our own unit planners in Managebac, which had subject specific information about the unit. However, in Managebac we were able to indicate our unit as interdisciplinary, which gave both of us access and visibility to each other's unit planners (see appendix 1 & 2).

After we had decided to approach our interdisciplinary unit with a mutual theme, it was time to choose the key concept we wanted. According to Minna: "It is the key concept which indicates and justifies this unit as interdisciplinary. Therefore, both of your subjects should have the same key concept. However, when you choose the related concepts for art and P.E.,

those should be related to only your own subject.” Minna showed us the official MYP curriculum, which indicated information about the planning of units in Middle school. In the curriculum, there was a section which listed all 16 official key concepts for the units in MYP. Those were: aesthetics, change, communication, communities, connections, creativity, culture, development, form, global interactions, identity, logic, perspective, relationships, time place and space, and systems.

From that list we had to choose one mutual key concept for our unit. First we debated between concepts of aesthetics, creativity, and form. In the end, we both agreed on that creativity would be a good key concept for both of us. Monica explained it from visual art’s perspective: “Creativity would be an appropriate key concept for this unit, since in visual arts we will investigate what art means to each student and how they see it.” For P.E. also, creativity seemed to be a good key concept. I knew our main sport during this unit would be ice skating. Therefore, I had in mind that the students could produce their own ice skating sequences and movements, and investigating those from different creative aspects.

After we had chosen our key concept for the unit and indicated that to our Managebac unit planners, it was time to choose our subject specific related concepts. According to Minna: “Both of you should choose 2 or 3 related concepts which support your subject and interdisciplinary unit.” Visual arts related concepts list included: audience, boundaries, composition, expression, genre, innovation, interpretation, narrative, presentation, representation, style, and visual culture. Monica chose her related concepts to be expression and innovation. She chose these two because she wanted them to be connected to creativity in a clear way. P.E.’s related concepts list included: adaptation, balance, choice, energy, environment, function, interaction, movement, perspectives, refinement, space, and systems. For P.E., I chose related concepts to be movement and space. Yet again, I chose these two by keeping in mind the ice skating sequences the students would be creating during the unit. Movement and space are both concept which they will have to take into consideration when they start to plan their movement compositions for their ice skating assessment.

The next step in our interdisciplinary unit planning was to choose a global context for the unit. MYP has 6 global contexts, which are: identities and relationships, orientation in space and time, personal and cultural expression, scientific and technical innovation, globalization and sustainability, and fairness and development. Together with Monica, we chose our mutual global context to be personal and cultural expression.

After we had chosen this, we had to write a description which indicate the global context's relation to the unit. Together me and Monica wrote: "In the context of visual arts and physical education, we will look at ways of extending and enjoying our creativity through discovery and experimentation." According to Minna, this sentence should be connectable for both subject's assessment criterions, and include verbs which indicate the actions students will take part of during classes. Monica and I agreed that the statement was good for our unit. Also, Minna thought the statement was excellent.

Monica concluded our meeting by saying: "This is so much more pleasant to think and plan these things with other people around the same table, not alone and frustrated at home."

2nd meeting

15.11.2013, duration 60 minutes

Present: Myself, Monica Joensuu and Minna Tammivuori-Piroux

The 2nd planning meeting for the interdisciplinary unit continued from where we had left our unit planning in Managebac. We started our planning with trying to think of a statement of inquiry for our interdisciplinary unit. This was a hard task. According to Minna, this statement should be a strong statement that implies what the context of the unit will be. Minna asked us which one is the direction we want to go to in our unit: different forms of creativity or the process of being creative. Monica and I both agreed that we would want to approach our key concept, creativity, by enhancing the process of being creative, since it involves the different forms of creativity. As we tried to write our statement of inquiry, we tried different types of statements before choosing the final one. We had statements such as: creativity is the key to personal and cultural expression, creativity takes different forms to express one's personality and culture, students will understand that understanding creativity is the key to personal expression, creativity cannot be taught, personal expression does not exist without creativity, creativity requires personal expression, creativity reflects personal expression, creativity inspires personal expression, personal expression inspires creativity, personal expression requires inspiration and creativity. Monica explained what creativity means in visual arts: "In visual arts, creativity means creating something new and being innovative. That is how I will assess the students. How many sources you have? And how do you merge the sources in to your idea? Where are you taking all this inspiration from? To me, the significant thing is that the students will show what are the important things to them in visual arts and creativity."

Finally, with the help from Minna, we were able to write a statement that we felt like was appropriate for our unit: Creativity inspires and develops personal expression. According to Minna, our statement was really good since it has a good beginning and it also indicates the process of growing and developing throughout the unit.

The next step in our unit planning was to write different inquiry questions, and lines of inquiry. Minna explained to us that there are three types of questions in the unit: factual level, conceptual level, and debatable level. We started from the factual level, which according to Minna, is the most basic level in the unit, and usually a good starting point. She advised, that good inquiry questions for P.E. would be: what is creativity in physical education? And a proper line of inquiry would be: definition of creativity. After this, Minna advised us to write another factual level question to indicate more of the direction of the unit. The second question I wrote to the factual level was: what different forms can creativity take in ice skating? In Monica's unit planner, her factual level questions were: what is creativity? And, what different forms can creativity take? For both of our planners, the line of inquiry on the factual level was: forms of creativity.

The next task for us was to write the inquiry questions for conceptual level. According to Minna, this is a more abstract level than the factual level. She explained that in this level we should use our own subject's related concepts, innovation and expression for visual arts, and movement and space for P.E. Minna advised that in this level the questions should start with words how or why. Minna gave few examples for us: How is creativity implied in movement compositions? And, how is creativity expressed in visual arts? In P.E. unit planner, I decided to have my first factual level question as: How can space be used to express creativity? And, the line of inquiry for this was: Space usage in creativity expression. The second factual level question for P.E. was: How can movement be expressed in space? And, the line of inquiry was: Expressions of movement. Monica chose her own factual level questions for visual arts. Those were: How can innovation change personal expression? Line of inquiry for this was: new ways of personal expression. Second question for Monica's factual level was: how is creativity expressed in visual arts? And, the line of inquiry for this was: styles of visual expression.

3rd meeting

22.11.2013, duration 60 minutes

Present: Myself and Monica Joensuu

Minna could not be present in our third planning meeting, so Monica and I had a planning meeting by ourselves. We continued on where we had left

our unit planning last time. The next step for both Monica and I was to create our debatable questions for the unit. According to Monica: "Our debatable question should be something which can be present in their final assessments for the unit. This question makes the whole learning meaningful, and at the same time this question can be a connector between these two subjects." We started to brainstorm different ideas for our debatable questions. I came up with questions as: What if I do not respect your personal expression? What happens if my creativity is limited? Monica invented questions as: Is there a limit to personal expression? As we tried to brainstorm proper questions for the debatable level, Monica said to me: "If us teachers would have to answer these questions, would we know how to do it? These are 6th graders, so it is important to create questions what they are capable answering to." At this point, Monica and I agreed that this last question should be something which the students can investigate and explore throughout the whole interdisciplinary unit. Therefore, after long discussion, we agreed on a debatable question: Is there a limit to personal expression? And the line of inquiry for this was: personal boundaries in expression.

The next section in the unit planner on Managebac was to add the assessment criteria for both subjects. Monica chose all visual arts criteria for the unit, and I chose two of the P.E. criteria. According to Monica, the criteria need to be chosen so that there will be evidence of those during the unit. Visual arts assessment criteria for our unit were: knowledge and understanding, application, reflection and evaluation, and personal engagement. The assessment criteria for P.E. were movement composition, and social skills and personal engagement.

4th meeting

29.11.2013, duration 30 minutes

Present: Myself, Monica Joensuu and Minna Tammivuori-Piroux

The 4th planning meeting started with Monica discussing with Minna about her confusion concerning how her yearly assessments for visual arts would be completed. This discussion took longer than expected so we did not use the entire meeting time for the interdisciplinary unit planning.

After this, we continued working on the unit planner. Minna checked if we had followed the MYP guidelines appropriately on our unit planners. After this, she showed us the MYP Guide to Interdisciplinary Teaching. She explained us some simple guidelines of how would be a good way to complete unit. She showed an example interdisciplinary unit and explained how we should have three steps in the unit: the introduction, the middle

assignment, and the end. We ended the meeting by agreeing that we would continue the planning on our own and have small discussions about the unit planner before the actual implementation started. We also agreed to plan the unit along the way after it has started so we could see how the students react to certain aspects of it

Phase 2. The Implementation of the Interdisciplinary Unit

1st visual arts lesson

Thursday 9.1.2014, duration 75 minutes

I could not be present during the first two visual arts lessons since Monica wanted to have a smooth introduction to her visual art units of the year. This was also her first 6th grade lesson of the entire academic year, so I agreed with Monica that it would be best if she started the visual arts lessons by herself. The first lesson was an introduction to the visual arts and only included a small section in the end which was linked to our interdisciplinary unit. In the end of the first lesson, Monica had started to introduce the key concept of creativity with in-class discussions with the students. After her class, we had a meeting where she explained the content of her lesson in detail. She elaborated her lesson as follows:

I started the lesson by asking the students questions from the factual level of the unit plan (see appendix 2.): What is creativity? What type of forms can creativity take? What type of person is a creative person? The students participated well in the conversations and gave examples of how to be creative in visual arts. After this, I told my own opinion of what I think creativity means in visual arts. Then I showed the students what is the MYP's official definition of creativity in visual arts. In the end of the class I gave the students homework where they had to collect few images from home, newspapers, Internet etc. that are good examples of creativity.

(Monica Joensuu, personal communication 15.1.2014.)

2nd visual arts lesson

Monday 13.1. 2014, duration 75 minutes

I was not able to participate for the second visual arts class. Monica explained the lesson as follows:

During the second visual arts class we were able to get more in depth with the concept of creativity. First we went through the homework by viewing and discussing about some of the images the students had brought from home.

Only few students had actually completed the homework so we spent a bit time by searching some images from the newspapers I had in class. The purpose was for the students to try to find images which they thought were representing creativity. After this we discussed about the images and students were able to communicate their opinions about the pictures. After this, I asked the students: What makes you creative? We watched three video clips from www.ted.com. Those clips were How to build your creative confidence by David Kelley, Taking imagination seriously by Janet Echelman, and Dance vs. PowerPoint by John Bohannon. Students were excited about the videos and watched all three of those in complete silence. In the end I raised a question: What stops us from being creative? (Monica Joensuu, personal communication 15.1.2014.)

3rd visual arts lesson

Thursday 16.1.2014, duration 75 minutes

During the third visual arts lesson I was present in class. We started the class with Monica reviewing what they had done in class during the previous lesson. After that I explained to the class the reason why I was there. I explained my visual arts-related background and my passion for art. After this, I introduced the interdisciplinary unit with visual arts and P.E. I explained the goal for the unit, which was to try to find connections and common themes, and investigate those from both subjects perspective. I described how I was going to be present in all of their visual arts classes as an observer, and Monica would be present in some of the P.E. lessons. I also raised some factual level questions (see appendix 1) to discussion: How is creativity seen in sports? What does creativity mean in physical education? What different forms can creativity take in ice skating? How can an athlete be creative? Is there limit for being creative in sports? The students responded well to the questions, and said comments as: Game/match situations can be creative; in team sports creativity can be limited because one has to take into consideration the rest of the team; one can be creative in training.

Keeping these questions in mind, we continued the lesson by watching few videos from www.youtube.com. I showed the students a couple's figure skating clip called "Tatiana Volosozhar & Maxim Trankov (Russia) - ISU World Figure Skating Championship 2013 - Pairs Free Program". With this clip, I wanted to introduce the students to our upcoming P.E. lessons, and show them an example of figure skating. Straight after this clip I showed them another video which was a collection of ice hockey goals from a game USA

against Canada played in the World Junior Championships in 2013. We discussed about both clips and how creativity was visible in those. Students said that choreography, movement, music, and the character of the figure skating performance all required creativity.

Monica was in charge of the next activity. She played few different music samples and the students were drawing marks in their sketch books based on what they heard. The idea of the activity was to introduce the students to drawing and just let them loosen up. The focus was not to draw something representative, but to just interpret the sound to marks.

The next section of the lesson was also led by Monica. She wanted to introduce some visual arts concepts. I stayed as an observer and did not take part in the teaching. Monica showed the students a power point presentation about movement and visual rhythm. She showed examples of different movement and rhythm one can see in visual arts works. The students responded well to this and listened quietly.

The last part of the lesson I implemented together with Monica. We went outside to the school field and did a small outdoor activity. Together with the students, we re-discussed those two video clips we had watched in class: figure skating and ice hockey. The students had approximately 3 minutes time to make different marks on the ground which was covered with thin layer of snow, using their feet. The students could choose between two tasks: they could make marks which they thought would appear on the ice after a figure skating performance, or marks which would become visible after an ice hockey match. This was a fun and energizing activity, and the students seemed to enjoy being outside during a visual arts class.

4th visual arts lesson

Monday 20.1.2014, duration 75 minutes

The fourth visual arts lesson started with an introduction to “How can I express my own creativity through visual arts”. The focus on the lessons content was on creativity and movement. I was present in class, but only as an observer. Monica took full responsibility of the teaching. She set up three different stations which introduced three techniques of tracing.

In all three stations the students were able to create their own content of their work. There was no pre-determined theme or concept the students were meant to interpret. The idea was for them to explore these different techniques creatively. First station was to create big marks by outlining different areas of the body. She had placed some big papers on the floor.

The students had an opportunity to try to trace different marks on the paper keeping in mind the last visual arts lesson's exploration on the snow. For example placing an arm or a foot on the paper and drawing the outlines of it. The second station was painting. In this station the students could paint by only using their hands and fingers. This station was also for exploring the body movement and tracing. The students were able to create their own shapes and images using their imagination. In the third station the students practiced relief printing by using acrylic sheets and carving tools. In this station also they could create any lines and shapes. First they drew the image they wanted on the acrylic sheet, then carve it out. Finally they printed those carvings on small sheets of paper.

The students responded well to the stations. Throughout the whole lesson Monica emphasized the key concept of creativity. She brought it up to the students in different situations, and asked prompting questions. Especially the boys seemed to get excited about the relief printing station. They all chose that station first. They planned their images carefully and used time for it. The girls chose the hand/finger painting station first. They did not plan their works, and started creating different marks on the paper immediately. The girls who sat in the same table next to each other, all created similar shapes to the paper, and used similar color palette.

This lesson was an exploration lesson, and the purpose was to slowly introduce the students to different ways and techniques of creating marks. The works students created were all unfinished and most of them had time to only discover one station and one technique. Same stations were investigated again during the next visual arts lesson.

At the end of the lesson, Monica allowed me to have 5 minutes to just introduce the upcoming interdisciplinary P.E. lesson. I reminded the students about the ice skating lesson scheduled for the next day. I also asked the students to keep their mark making experiences in mind for the P.E. lesson since we would investigate those later on.

1st P.E. lesson

Tuesday 21.1.2014, duration 75 minutes

The first P.E. class started with a quick introduction to the unit. The students had already been informed about the interdisciplinarity unit during visual arts class so the introduction was fairly short. Also at this time the temperature outside was -12 degrees Celsius, therefore I did not want to keep the students standing too long. Since I had no previous knowledge of how well the students could ice skate, I spent first couple minutes observing

their moving on the field. Mostly the students were able to stroke forward and stop. Backward stroking seemed harder for most students. One student had more difficulties than the others. After observing, I started by going over some basic techniques such as different ways to stop, basic stroking, forward and backward swizzles. Then students had few minutes time to practice these on their own. After this we did a relay race with two teams. Both teams had to ice skate the same distance one at a time. In this race I noticed how much one students lack of ice skating abilities affected on everyone. The teams were nowhere near equal causing the other team to lose.

After the relay race, I decided to start moving towards our interdisciplinary approach, and re-introduce the term 'creativity' in the ice skating context. This ended up being much harder than I had thought. I asked them questions such as: "How can one be creative in ice skating?" and "How does creativity in P.E. differ from creativity in visual arts?" At this point the girls in the class participated well in the conversations and seemed somewhat excited to discuss about creativity in ice skating. The boys seemed disengaged and did not participate well. I gave the students a task to work with pairs or small groups. The task was to try to invent different ways how to use ice skating and moving on the ice together with their pairs. Immediately all 4 girls in the class joined together and started to create their own sequences, similar to synchronized skating. They worked together, laughed, communicated well, and seemed to enjoy the task. The boys, on the other hand, did not respond as I wanted them to respond to the task. They continued being disconnected, did not want to participate, and started wondering around. This was a break through moment for me! I realized how I had planned the lesson thinking it would inspire every student. However, it was very gender-oriented. The girls enjoyed greatly when they had the opportunity to create their own ice skating movements and sequences. The boys did not. They had very low energy level and lack of enthusiasm. I tried my best to talk to them and inspire them to create any movement. Finally, they started to get slightly more excited, and worked on their sequences. After they had all had some time to plan their sequences, they performed those in front of the class. In the end of the class we played some tag games and follow the leader.

Overall, this lesson made me think a lot about the interdisciplinary unit we created. The boys in the class most likely only wanted to play games or matches with ice hockey or ringette. At this point, I decided to change my lesson content for the next ice skating lesson, so that also the boys would be engaged.

5th visual arts lesson

Thursday 23.1.2014, duration 75 minutes

I was not able to be present during the 5th visual arts class. Monica explained the lesson as follows:

We continued working on the same techniques as we did in the previous visual arts class. Students continued working on their art pieces. In relief printing, I taught the students how to complete the printing, and how to write correct marks on the printing sheet about the process. I also asked the students about the previous ice skating class. The girls responded and commented about it. The boys remained quiet. I explained to them about the International Baccalaureate learner profile attributes which are important part of being a student here, and also implied in this unit. Those are open-mindedness and risk-taking. I explained how those attributes are important in this unit and those will be used in the student evaluation also. (Monica Joensuu, personal communication 24.1.2014.)

2nd P.E. lesson

Friday 24.1.2014, duration 75 minutes

Since I had somewhat unsuccessful start for the unit, during the 2nd P.E. lesson I wanted to focus on engaging all the students in lesson activities. I decided to try to use different activities to try to help the students to understand how one needs many techniques and skills in ice skating to be able to play. I decided to take an approach to the lesson which would have a more direct connection to playing a match of ice hockey or ringette. And in the end, introduce the concept of creativity from that perspective. The start of the lesson was interesting. I was walking outside with the students, our ice skates on, when one of the boy students came up to me and asked: "Miss Koponen, are we going to do some of that artistic stuff again?" The question caught me off guard. I replied to him: "No, today we will have a little different approach on ice skating." I interpreted his question as a negative one. He was trying to know if the P.E. lesson today would be similar to the one before, which he did not enjoy.

I started the lesson by talking the students about the importance of techniques in ice skating. Without proper techniques and abilities to skate, it is ineffective to play, for example ringette or ice hockey. The students listened well. I reviewed some of the techniques from our last P.E. lesson and showed them some new ones. Together we practiced different stops, backward skating, gliding and cross overs. I was able to notice how the boys

started to get more engaged with the techniques when I introduced those from ice hockey's perspective. When the students started to be active and enthusiastic, I introduced them a game. We played a game called land-sea-boat. The field was divided into three areas, which were designated with cones, each section had its own name. First one on the left was land, area in the middle was sea, and area on the right was boat. All students started by standing on a line in the sea area. I yelled a word sea, land, or boat, and the students had to skate as quickly as possible to the designated area. The last one on the area or the one who was not able to stop quickly when needed had to step out of the game. Before we started playing the game, I explained the students how it is important to learn how to stop quickly and properly in ice-skating. Without the ability to stop, playing ice hockey or ringette can be difficult. The game was a success and the students really seemed to enjoy it. They got quite competitive with each other and really practiced their stopping.

At the end of the lesson, I introduced another game which was "capture the flag". We have played the game in previous lessons throughout the year so the game was familiar for the students. In the game, the group will be divided into two teams which both have a designated large area as their team side. In the middle of these two areas is a line of cones which indicate the two sides. On the both ends of the whole playing area, there are two "flags", or in this case, two plastic sticks. The goal of the game is to try to steal the other team's flag and bring it back to the own side of the field. When a member from the opposite team enters the other team's area, the team members can try to catch that person by tagging them. If the player is tagged, he/she must stop and stand still. The tagged player can be saved when a member from the same team touches them.

Before we started the game, I asked the students to view this game from a creative perspective. I asked them to create a creative strategy for their team which would help them to steal the flag. At this time, it was hard to try to incorporate creativity into the lesson since the students were so eager to play the game. They were not enthusiastic about talking about creativity. It was in the end of the lesson, and they were feeling cold. At this time, it was time to get them moving, so we started the game.

Monica was present in this lesson as an observer.

6th visual arts lesson

Monday 27.1.2014, duration 75 minutes

The 6th visual arts class continued with students working on their three different techniques and art pieces. Monica started the lesson by reviewing past few lessons, and explaining about the upcoming week's schedule for the unit. She reminded the class about the relief printing process they had started in the previous lesson. After this, she introduced the basics of monotype printing, and encouraged students to try it during next few classes. After this, the students continued to work on their pieces on their own. Overall, I noticed how the class seemed to be most engaged with the relief printing process, and used a lot of time in it.

As I observed the lesson, I noticed how well Monica used our key concept, creativity, in her verbal appearance. When students faced a problem or a dilemma in their working process, and asked for help, Monica did not give direct answers to them. She always turned the question back to the students, and allowed them to think of a solution on their own. She often replied to students questions: "You can do it as you want, think creatively!" She challenged the students thinking, and encouraged them to resolve their dilemmas on their own.

Towards the end of the lesson, some students started to be finished with some of their pieces. Monica advised them to start thinking creatively about how could they combine all three pieces into one piece. There was no rule for how it should be done. The students could use their imagination and creativity, and each create the final piece as they wish.

3rd P.E. lesson

Tuesday 28.1.2014, duration 75 minutes

I started the lesson by explaining the interdisciplinary unit in detail, it's key concept, related concepts, global context and assessment. I wanted the students to have a clear idea of what the graded assessment in the unit would be. In previous units I have done this also, and noticed how students enjoy knowing what areas of each unit are going to be assessed on. I also explained to them how we would complete our remaining P.E. lessons of the unit. I informed them how during each lesson we would have some basic technique drills, time to practice their movement compositions, and also some time for games and playing. During my explanation the students listened well.

We started the ice skating by playing a quick warm up game called “Chickens go home”. In the beginning of the game, one player stays in the middle of the field as a tagger. All the rest of the players line up in the other end of the field. The game starts by tagger yelling “Chickens go home!” With this mark, all the rest of the player try to ice skate as fast as they can to the opposite end of the field, and the tagger tries to tag them on the way there. If a person is tagged before ice skating to the other end, they also become a tagger. The game continues as explained until all the players are tagged. This was an effective warm up game. The students seemed to have a lot of fun with it, and they all participated actively.

After the game, we continued by practicing some techniques. First the students had time to practice some of the techniques they had already being introduced to. I went around the class, and corrected and gave advice to the ones who needed it. After this I introduced them a new technique: spinning or a pirouette. I demonstrated the technique of how to start the spin, to gain speed, use of arms, and how to continue it to a correct spin. I explained to the students how there are two types of spins: two-foot spin and one-foot spin. The technique is the same for both spins, but the only difference is in the use of feet. The students started eagerly practicing their spins. Especially the girls seemed to be excited about a challenging task, but I was surprised to see how few of the boys really tried to learn the spinning right.

After practicing the techniques, I reminded the students about the upcoming assessment task, and how they will be assessed based on the creativity of their movement compositions. I gave them approximately 10 minutes time to start the planning of their movement compositions on their own. I reminded them about the video clips of figure skating and ice hockey we watched during one visual arts lesson. By this I wanted to elaborate them how there are different ways to be creative in both visual arts and P.E.

In the end of the lesson I let the students choose a game. It did not come to me as a surprise that they chose Capture the flag.

7th visual arts lesson

Thursday 30.1.2014, duration 75 minutes

In the 7th visual arts class, Monica and I wanted to make a proper, concrete connection with our two interdisciplinary subjects, visual arts and P.E. Monica started the lesson by telling the students to sit on the floor. She did not want them to sit on their usual chairs, because she wanted to mix it up little bit. She reviewed with the students what they have been discussing and investigating in the previous art lessons. After this, she handed out a

creativity rubric which is written by Susan Bookhart (see appendix 3.). She asked the students to self evaluate in what stage they are in their creativity, reflecting on their artworks done in class. The stages were very creative, creative, ordinary, and imitative. After the students had completed the self evaluation, Monica collected all of them. She browsed through the papers to see how students had evaluated themselves. Then, Monica presented to the class how most of them had evaluated themselves. In most of the evaluations, the students had marked themselves in a section where they are either ordinary or imitative. Monica pointed out how it seemed like they were being very self-critical. She reminded the students how everyone has creativity within, and it was just a matter of letting it out. She also made a note how positive attitude towards new and unknown, is important part of creativity.

With this evaluation, Monica wanted the students to understand their own level of creativity, and show them ways of how improving. As I was observing the class when they completed the evaluation, I noticed a group of girls discussing about it. They talked about an art piece they had done in previous class, which was an imitation of an animal known as a Facebook icon. The girls discussed about whether they had been creative or not, when completing or copying the image. To me, it was interesting to notice this. In my opinion, the girls had started to realize the concept of creativity, and what makes visual arts works creative and what does not.

After the evaluation, Monica showed the class an article and a short video from www.thisiscolossal.com. The article shows a process with images where an artist who is originally a dancer, is using great body movement when creating her art works with charcoal. The visual artist is called Heather Hansen. Attached to the article, there is a video clip of her process of making her art works. Monica showed the class this video. She asked the students to view the video from both visual arts' and physical education's perspective, and pay extra attention to the body movement.

After Monica had showed the video to the class, she allowed me to take the lead. I wanted to bring the physical aspect of P.E. into the art classroom. I introduced a small assignment for the class. I asked the students to remind themselves about all the different movements they had done with their ice skates during P.E. lessons. I reminded them of the different techniques we had practiced, and the different ways how to use the blade of an ice skate. I also explained how in visual arts classes, usually they use their hand and arms, but in ice skating, they mainly use their feet and legs. Following this, I presented the assignment. I had placed a big sheet of white paper on the

floor. Monica had taken out some different color acrylic paints and poured those into large white trays. The task for the students was to first dip their feet into different acrylic paints. Then they would mimic their movements from ice skating lessons, and try to create similar marks on the paper as what they had created with their blades on ice. The students had to think of all the different techniques, and movements they had tried in previous ice skating lessons, and make those marks again. Finally, they would create a large piece of work which was a collaboration of different marks done by everyone in class. The exercise was a success. The students got excited about it, laughed, and tried different colors. Some students were only using the tips of their toes, and some their whole feet. Some created large and powerful marks, and others smaller and more delicate ones. The students seemed to have so much fun with this task, they did not want to quit. I had to ask them to go clean up since Monica had some lesson time left.

Monica finished up with the class by asking them to work on their individual art pieces what they had started in previous lessons. It was great to see how instead of sitting on their usual spots in the classroom, most of the students continued working on their pieces by standing up, using a more physical approach to their working. The atmosphere in the lesson continued to be fun and lively.

4th P.E. lesson

Tuesday 4.2.2014, duration 45 minutes

The 4th P.E. lesson only lasted 45 minutes since the school had a shorter day schedule due to teachers' professional development session in the afternoon. Since the duration of the P.E. lesson was shorter than usually, I wanted to use the lesson time effectively.

By the time we got to the ice skating rink, we had 20 minutes left in the lesson. It took the students 10 minutes to put their ice skates on and walk to the rink, and I had to let the students go to their next lesson 5 minutes earlier than usual since the recess only lasted 5 minutes. Therefore, since the lesson time was so unfortunately short, I decided to use it as actively as I could. I explained to the students that we have a very little time, and asked them to choose an active game. They chose capture the flag. This turned out to be a good and effective lesson, regardless of its short time. The students had time to be physically active, and play a fun game. They all participated well, smiled, laughed, and screamed. They were physically extremely active, perhaps more active than usually. I wonder if this was because they knew they had only limited amount of time.

Even this was an extremely short P.E. lesson, I was happy we were able to execute even a short activity. In the end of the lesson, I used few minutes to explain the course of the next three P.E. lessons. I reminded, that our interdisciplinary unit continues another week and a half, and that we will continue exploring the areas and aspects of creativity.

Three students were not able to participate in the P.E. lesson. One student forgot his ice skates at home, and could not find a proper size from the school's ice skates. Two students had notes from home that they had been sick lately, and could not participate in the lesson. For these three students I had a written assignment which they completed during the lesson. The assignment was that they would plan their movement compositions for ice skating. I explained to them that they could write or draw their sequences on a sheet of paper. All three students completed the assignment well and returned their plans to me after the lesson.

8th visual arts lesson

Thursday 6.2.2014, duration 75 minutes

Monica started the class by reviewing the process the students had done earlier. She explained the course of the next upcoming lessons, and clarified that when students were finished with their three separate techniques, they could start planning how to combine these. The final product would be one art work which the students would verbally present to the class.

Monica explained that the purpose of creating these three separate pieces is to get the students introduced to different methods of applying. The finally they can use their creativity to combine the three techniques and create a final piece, as they wished.

The students continued on working on their pieces. Some were already finishing up and combining the final piece, others continued on exploring the techniques. I was especially happy to see a change in the students' behavior. They were much more lively and active than before. They also started to be more social with each other. The girls were working on an additional piece together, and the boys got excited about finger painting together.

Towards the end of the lesson, two girls were finished with their final pieces, and ready to present those to the rest of the class. Monica asked them to show their pieces to the class and explain the process. Monica asked them questions as: What was the aim of the project? How did you approach the idea of creativity? What was the best part of the project? Did you notice the difference between the techniques? Did something limit your creativity?

What was the best part of the project? Would you have done something differently? The girls replied how they enjoyed that they were allowed to carve and paint whatever they wanted. They explained how the carving was the most challenging technique since it was new to them, and difficult to use. They commented how they felt they could use their creativity in any possible way, without any boundaries.

5th P.E. lesson

Friday 7.2.2014, duration 75 minutes

The 5th P.E. lesson started with a quick introduction on the upcoming lesson. I explained that today the students would have a chance to experiment with the ringette sticks and rings. I also elaborated that in their upcoming movement compositions they could choose if they want to use the ringette sticks and rings to demonstrated different techniques and movements. The boys seemed to be more enthusiastic about this opportunity than the girls. Therefore, I gave them a choice, they would not have to use them if they did not want to.

After the introduction, the students had some time to warm up individually on the ice rink, using the sticks and rings or not. The boys immediately took sticks and paired up with each other. They started to ice skate around, passing and receiving, and playing around with the rings. The girls did not take the sticks and started to move around practicing their figure skating techniques.

When the students were warming up, I used cones to build a technique course on the rink, in which they would practice their ringette skills. The course included different sections. It started with going forward and round a line of cones. After this the students had to skate around one cone, and practice their cross over skating. The next part was to turn around and try to skate backwards for a short distance. Finally, the last part was to skate forward as fast as they could and end the course for a stop. Each student had their own stick and a ring, and they would take turns to complete the course one at a time. During this skill course the students seemed to enjoy it a lot. They got competitive with trying to complete the course faster than others.

After this, I gave them more time to practice their movement compositions as Monica had just arrived to the ice rink. While the students were going over their movement compositions, I identified an area on the ice which I marked with cones. This area had a small layer of snow on top of it, and it was approximately twenty square meters big. Monica brought some mixed watercolors in big containers. She had three colors, blue, yellow and red. The

next activity was led by Monica. She asked the students to remind themselves on the feet painting activity which they had done earlier during a visual arts class. Monica explained that now was time to complete a similar type of exercise on ice. She told the students that they could each choose a container of watercolor and use that to create similar marks on the designated area on ice which they had been practicing in their movement compositions. They could just simply hold the container in their hands and do pirouettes, turns, glides et cetera, as the colored water would drip on the ice and make different colorful marks. Monica explained well how the purpose of the exercise was to bring aspects from the visual arts lesson to the P.E. lesson. Also, since the students had already done a similar movement and feet painting exercise during the visual arts class, it was fairly easy to refer to that exercise when explaining it to them. With this we wanted to have a concrete example of using body movement in P.E. when ice skating, and how to make something creative with that as incorporating visual arts to it.

I noticed how as soon as Monica had given the explanation of the task, almost all students quickly grabbed a container and started to do the activity. Only one boy was slightly hesitant at first, and used few minutes to just observe his classmates. Eventually, he also participated to the activity. The students seemed to have fun with the task. Some students tried to make similar marks as they would have when doing their movement compositions. And some students were just being creative and open-minded, and tried different ways to pour the watercolor on the ice. Others concentrated more on the marks they could do on the ice with their ice skates, and others focused on the marks the actual watercolor created.

After we had completed the exercise, Monica left the ice rink and we continued with the lesson. I introduced ringette to the students. I demonstrated some basic ringette techniques, passing and receiving the ring, and the basic rules. After this we had time to play a quick ringette match.

9th visual arts lesson

Monday 10.2.2014

The last visual arts lesson of the unit started with Monica going through the visual arts assessment criterions for the unit. Those were knowledge and understanding, application, reflection and evaluation, and personal engagement. She explained each criterion individually and identified how those would be assessed.

The first assessment criterion for the unit was knowledge and understanding. Monica explained that in this criterion, the students could score maximum of eight points. She clarified how in this criterion, the students need to have a section in their art workbook in which they explain or have notes on: What is creativity. Have samples of creativity. Limitations and benefits of creativity. Movement in art. Linkage to P.E. through figure skating and ice hockey videos.

Then Monica explained other criterion which was application. In this criterion, the students could score maximum ten points. She explained that in the assessment of this criterion, the students would need to have evidence of the three different techniques they used in their final art pieces. Those were print making, tracing and hand painting.

The next criterion Monica explained was reflection and evaluation. This criterion was also assessed as maximum 8 points. She described that when she is assessing this, she needs to see proof of the process and different steps the students have faced throughout the unit. The evidence of this would be seen in the students' art workbooks as personal notes and comments.

The final assessment criterion for the unit was personal engagement which was maximum ten points. In this criterion, the students would self assess their process and engagement during the unit.

After reviewing the assessment criteria for the unit, Monica advised the students to continue working on their final pieces. As I observed the course of the lesson, I noticed how Monica emphasized particular aspects to the students. She often advised the students to try to be creative, unique, and different in their art works. She encouraged the students to be risk takers and open minded about exploring different techniques and ideas in their pieces. When a student showed evidence of being creative, unique or different in his/her piece, Monica would embrace the person in front of the class.

In the end of the lesson, Monica allowed me to say few words about the risk taking and uniqueness when it appears in P.E.

6th P.E. lesson

Friday 14.2.2014, duration 75 minutes

Due to bad weather conditions we could not complete our last P.E. lesson of the unit as I had planned. The weather warmed so quickly so the ice rink melted outside, and we had to have our P.E. lesson indoor. Therefore, I also

could not complete the movement composition assessment task for the unit as I had planned.

I chose to have an indoor P.E. lesson with volleyball since it was the last lesson before winter break, and I did not want to start a new unit with my students. We used the first 50 minutes going through some warm up drills, techniques, and playing short matches. Towards the end of the lesson, Monica arrived at the gym. We had decided to have a reflection together with our students. The last part of the lesson I asked the students to fill out a self evaluation sheet (see appendix 4) regarding our interdisciplinary unit. With this evaluation, I wanted to see how the students would evaluate their own personal engagement during the unit. After the evaluation was completed, Monica and I decided to tell our reflection on the unit to the students.

I started by telling how I felt about the unit. I explained how Monica and I were also new to this type of interdisciplinary unit, and it was a learning experience for both of us. I told how pleased I was with the students' willingness to participate during visual arts classes. Additionally, I explained my frustration with the P.E. classes to the students. I elaborated how I should have respected the nature of the subject more, by inventing more fun activities to the students, and less talking. In the end I thanked all the students for participating during the lessons, and being open-minded about the outcome.

After my comments about the unit, Monica explained her feelings regarding the unit. She clarified how us teachers had also been explores and risk takers during this unit, and sometimes questioned our methods. She explained how proud she was of all the students for succeeding in their attempts to incorporate movement and creativity in their art pieces. In the end, she mentioned how there are so many different aspects one can link visual arts and P.E. with, and how we had only scratched the surface with this unit.

When both Monica and I had explained our feelings regarding the unit to the students, we asked their comments about it. The students commented how it was fun to do the feet-painting exercise and painting on the ice. They also gave suggestions about how an interdisciplinary unit with visual arts and P.E. could be implemented in the future. They gave suggestions as: "We could paint a football and play with it, and it would leave marks on the ground!" And: "We could also paint a dodgeball and then when the ball hits someone, it leaves a paint mark on their body." After the students had given us some comments about the unit, we thanked them for the lessons and wished them an enjoyable rest of the day.

Phase 3. The Reflection

I had several reflection meetings with Monica during and after the interdisciplinary unit was completed. The reflection meetings occurred during the implementation of the unit, and usually happened immediately before or after a visual arts or P.E. lesson. These meetings lasted approximately 15-35 minutes at a time. This gave us an opportunity to give each other instant feedback and ideas about the lesson, and the continuation of the unit. After the interdisciplinary unit was fully completed, I had a final reflection meeting with Monica. In this meeting we reviewed the course of the project and reflected on how we succeeded in our goals and objectives.

Monday 20.1.2014

In our first reflection meeting, Monica and I discussed about our feelings concerning our very first interdisciplinary visual arts lesson, when we were both present during the lesson. Monica described her feelings:

After first interdisciplinary lesson, I had really good feelings about it. I felt like we succeeded really well to incorporate areas from visual arts and P.E. into creativity. After the lesson ended, I only had 5 minute break between classes, and I felt overwhelmed. I had so many thoughts and ideas in my head and I felt like I did not have time for a deep and proper reflection. (Monica Joensuu, personal communication 20.1.2014)

I was as excited about the first lesson as she was. We both agreed on how it had been a great lesson, and successfully opened up aspects from both subjects. The students seemed to be engaged with the lesson content, they listened carefully, and appeared to understand what me and Monica were trying to communicate. We both agreed on how our occasional co-teaching had worked well due to good planning. Also, Monica explained how she enjoyed the experience of sharing her teaching with me.

Tuesday 21.1.2014

You are the teacher who designs, plans and prepares the students for their lessons. I understand how P.E. is supposed to be fun and active subject, but at the same time it is you who make the final call on what the lesson content is. (Monica Joensuu, personal communication 21.1.2014)

As I felt overwhelmed, completely beaten down, after my first P.E. lesson of the unit, Monica was the one who helped me fully understand the situation. I ran to her classroom after my lesson, and explained what had happened

during class. She listened me calmly. She helped me understand the teacher's authority more. She explained how the MYP encourages the teachers to try to complete interdisciplinary units, and with this experiment we are both on a path of learning from it. Our goal is to try to create the best interdisciplinary unit we could, and understand the process of it. She explained how sometimes the lessons will not go as planned, and the key thing is to learn from it.

During this reflection meeting we also discussed about the nature of the subject, P.E. We discussed how deeply the P.E. traditions have rooted in the subject, and how hard it is to try to change those. Students are used to have P.E. lessons which are filled with games and matches, not discussion. We discussed how P.E. should not be about talking, it should be all about doing. We also talked about how in ice skating I should not introduce only one extreme of ice skating during one lesson: ice hockey/ringette & figure skating. The lesson content should be something that easily falls in the middle of these two extremes so students who enjoy either one of the areas (ice hockey/ringette & figure skating) can still be engaged during lessons.

The experience from the lesson and our reflection meeting made me think: Why is it so challenging to have an interdisciplinary approach during P.E. classes?

Monday 27.1.2014

The ideas and concepts of interdisciplinary units cannot be seen simultaneously with the implementation of the unit. The whole purpose of this is to help the students to understand those connections, which they can fully comprehend in the future. Grade six is the first year of MYP, which is new to them. Perhaps this project is an appropriate starter for their future studies in the MYP. Also, the theme of physicalness, and using their body seems to be a hard thing for the students to deal with, especially in visual arts.
(Monica Joensuu, personal communication 27.1.2014)

In this reflection meeting, Monica helped me understand how we cannot expect to see our students formulate interdisciplinary connections instantly. It is a process, and perhaps they will fully comprehend those connections not during lessons at school, but in their everyday life.

I was also able to relate to Monica's concerns about the physicality and body awareness. She mentioned how during visual arts classes the students were often sitting down, always in same spots, completing their art works with hands. They would not use their whole bodies in the process of making their

works. I explained how I can relate to a very similar problem which often occurs in P.E. lessons. At that age, the physical confidence of the students can often be very minimal. This affects their physical activity. We both agreed that perhaps this would be another area of improvement in the future lessons.

Thursday 30.1.2014

I had a silly feeling yesterday when I thought about our unit. I feel the students will never get what we are trying to say here. I see myself as a clown in front of the class. The students just sit still, anemic, do they realize anything we are saying? I feel desperate.

(Monica Joensuu, personal communication 30.1.2014)

Monica and I discussed about how I was able to relate to her desperate feeling about the unit. I had had a very similar feeling after my first P.E. lesson of the unit. We talked about the despair teachers sometimes face when they feel they have failed in their teaching. During this interdisciplinary unit, we both had had a feeling that our teaching was not efficient enough for the students to completely understand it. We both had blamed ourselves. The reflection discussion we had on 30th of January 2014 occurred prior to our visual arts class that day.

Tuesday 4.2.2014

Reflecting on the latest visual arts lesson on 30.1.2014:

I was so sure the boys would sit still and not participate in the exercise where the students had to paint with their feet! However, I was so excited to see them jump up and get excited about the assignment. They were laughing and smiling, talking to each other, and being active.

(Monica Joensuu, personal communication 4.2.2014)

Monica and I both agreed that this particular visual arts lesson had been very successful. Especially, we were pleased with how the boys in the class had acted during and after the feet-painting task. The task seemed to release a lot of energy in a positive way. Afterwards, especially the boys were continuing their individual art assignments standing up and moving around. Previously they had usually been sitting down in their same spots. Also, the girls in the class participated very actively in the feet-painting exercise, and seemed to enjoy it enormously.

As we reflected on this particular feet-painting task, both Monica and I had the same opinion what the possible reason for this positiveness was. We

believed the students got excited about the task because it allowed them to be physically active, work together, and let loose. Even visual arts is a subject where they are allowed to do all these things, perhaps they felt restricted or shy to fully jump into the art making process. Yet, this is all our speculation we base on the smiles we saw on our students' faces. However, we cannot be fully sure how the students experienced this, since we did not interview them after the lesson.

Monica told me that she had discussed with the 6th grade science teacher after our visual arts class on the 30.1.2014. The science teacher had mentioned to Monica, he had the best science lesson of the whole year with this particular 6th grade. They had been very co-operative, positive, active, and participated well. Monica had explained to him what the lesson content was during the visual arts class and elaborated how well the students participated. He was pleased to hear that and suspected that the positiveness which occurred in visual arts class might have carried to the science class as well. I was really pleased to hear this. As I mentioned earlier, this particular lesson, in our opinion, did seem like a successful one. Therefore, I was happy to hear that perhaps the students truly were positively influenced on our lesson.

Thursday 6.2.2014

Creativity and movement seem to be the key terms here. The students are acting completely different now than during the first few lessons. They are moving around and completing their art works with much more body movement than before.

(Monica Joensuu, personal communication 6.2.2014)

Both Monica and I were excited to see the change in our students' class behavior, enthusiasm, activeness, and laughter. We discussed how pleased we were especially with few students who seemed to have opened up more than usually. In addition, we discussed about the change of spirit in the class. Some students were involving others more, and doing work together as groups, not individually. We reflected on the idea of physicality and the use of body in learning. We both had the same opinion on how physical activities should be used more consistently in visual arts and other subject lessons.

Tuesday 11.2.2014

Perhaps our strength here has been that we have both been so uncertain about the outcome. We have taken an open-ended discourse to this unit, and let the students be the explorers.

(Monica Joensuu, personal communication 11.2.2014)

Monica and I discussed about how towards the end of the unit, we have realized how it has been such a big learning experience for both of us. We spent a lot of time in the planning phase, since we wanted to complete the unit planner accurately, and taking into consideration the MYP limitations. However, when the unit started, we were both very doubtful about the course and outcome of the unit. We felt we had jumped into unknown. We both agreed how this uncertainty has been exciting and rewarding at the same time.

Many topics came to surface during the unit. The most important observations were the aspects of physicality and physical activity during both visual arts and P.E. lessons.

(Monica Joensuu, personal communication 11.2.2014)

In our final reflections, we both agreed that if we were to plan and implement this interdisciplinary unit again in the future, we would concentrate more on the topic of how physicality, activities, and movement are present in these two subjects. We also discussed if the 6th graders were too young for this particular interdisciplinary unit. Perhaps a similar unit would need to be explored with older students, and see how it would work with them.

DISCUSSION

In the discussion section I will first answer my research questions. My main research question is: What can interdisciplinarity do when it is being used in art education and physical education? My sub-questions are: What are teachers demands to create an interdisciplinary unit, and how is interdisciplinary unit planned, implemented and reflected? And, how does an implementation of an interdisciplinary unit affect the teaching of it? After I have answered my research questions, I will discuss four different themes I noticed as I reviewed my data, and reflected on my research questions. The themes I discuss are: Physical education as an interdisciplinary subject, the presence of physicality in other subjects, visual arts as an interdisciplinary subject, and the importance of reflection between teachers.

Research Questions

With my main research question I ask: What can interdisciplinarity do when it is being used in art education and physical education? As I was in the process of completing my research, I came to the conclusion that, at its best, interdisciplinarity with visual arts and P.E. can offer effective and rewarding experiences for both students and teachers. However, with these particular subjects interdisciplinarity can also be very challenging. These two remarks were illustrated in my personal journals and notes, and also in my conversations with Monica.

When Monica and I implemented interdisciplinarity into the visual arts class room, the results were eye-opening. As a result from the feet painting assignment, the reactions and responses the students showed, indicated us what interdisciplinarity can do when it is being successful. With that assignment the students were able to take the physicality and imaginary from ice skating, and utilize it with art related manners. Wexler (2007, 223) elaborates: "Interdisciplinary art education is as much about thinking as it is about doing." With Wexler's statement, I propose that interdisciplinarity with visual arts and P.E., which occurs in a visual arts setting, should be investigated with active activities and assignments. Therefore, interdisciplinarity in visual arts can effect on students in many levels and create an active learning environment for them. When it is being incorporated with physical education, it can bring physically active aspects into the visual arts classroom, make students be more physical with their art assignments, and also bring enjoyment to their learning.

As I reflect on this particular feature of physicality which occurred during the visual arts classes of our unit, I recall what were, and still are, my personal approaches in my own art making procedures. During my time in the U.S. as a visual arts student, I experimented a lot with the physical aspects of making my own art. I found it extremely compelling to explore different thick textures in painting, use my whole body movement in my drawings, and smell and feel the chemicals on my skin when doing photography work with film. Also, different physical aspects of art making have been present in my life ever since I explored those in the U.S. Currently, my own art making is always associated with physicality which occurs in the process. I find it captivating to work with photography by exploring different approaches and angles by being physically active during the process of photographing. While switching positions and moving around I engage myself physically with my own thoughts and my subject matter.

The presence of physicality in art making seems natural to me, and seemed also to be successful in the implementation of our interdisciplinary visual arts lessons. However, there were also great challenges in the unit. The most challenging part of the unit appeared during the P.E. lessons. Even the watercolor painting exercise we completed during one P.E. lesson, was somewhat a successful activity, overall it still felt difficult to try to implement visual arts aspects into P.E. lessons. According to Marlett & Gordon (2004, 228): "If educators create an environment in PE that integrates the content with relevant experiences, students are able to think better from a PE framework." With our watercolor painting activity, Monica and I tried to complete it exactly as Marlett & Gordon describes. Perhaps we were able to create an environment to the students which made them think about visual arts in P.E.'s viewpoint. Or perhaps the activity made them understand more about P.E. and its many dimensions. However, this does not remove the experience I had when the students strongly showed enthusiasm solely towards traditional P.E. related activities: games, plays, drills, relay races, tag games et cetera.

My second question is: What are teachers demands to create an interdisciplinary unit, and how is interdisciplinary unit planned, implemented and reflected? I investigated this question through all three phases of my research. Those phases were the planning, implementation, and reflection. In the first phase of my research, the greatest demand was to try to organize an appropriate time for myself, Monica, and Minna. Both Monica and Minna are full time teachers, with already a great work load. Therefore, it was difficult and frustrating at times to try to plan our meeting times, and utilize those effectively. At the planning phase, the teachers who are involved in

the interdisciplinary unit have to have enormous amount of motivation and willingness to start the process of creating the unit. According to McGehee (2001, 381): "...at the interdisciplinary planning table, teachers need to bring knowledge of process as well as content, an understanding of learning, and an openness to see the bigger picture in the curriculum." As McGehee states, Monica and I both brought our expertise from visual arts and my general knowledge of P.E. to the planning stage of the process. Additionally, Minna brought her expertise concerning the administrative side of the process, along with her knowledge of the entire MYP curriculum. With the guidance we received from Minna, we were able to see our interdisciplinary unit better in the same mix with all the other units.

A challenge Monica and I faced at the planning phase was when we had to complete the MYP unit planners correctly (see appendix 1 & 2). The planners were not easy to fill out, and we were lucky to be able to have Minna's help also at this matter. Those needed to have specific details concerning the unit, which at that point of the process we did not have. After all, Monica and I agreed that we would develop the unit as it is implemented, based on our reflections on it. Therefore, we did not have all the necessary specifics ready when we first completed the unit planners.

In the second phase of the research, Monica and I had to have true dedication and enthusiasm to implement our interdisciplinary unit. During the implementation, we experienced some strong emotions, involving disappointment, excitement, and satisfaction. With these strong emotions and feelings concerned, the teachers involved in the unit need to have true passion for it. Only with great dedication to the unit, the teachers can openly share their feelings of it, and be willing to commit to it. Therefore, when an interdisciplinary unit is implemented, the best way how it can be executed is to be open-minded about the outcome. When teachers allow themselves to make mistakes and learn from those, they can self develop in many different ways, and offer better learning experiences for their students in the future.

The final phase of my research, the reflection, provided genuine information about the entire process of my research. It was a combination of Monica's and my feelings and thoughts about the unit. Therefore, in my opinion, one important demand in the creating of an interdisciplinary unit, is the teachers willingness to reflect with each other throughout the unit, and be open to self develop. McGehee (2001, 380) describes how teachers should know what and how they can transport their knowledge to the planning of the interdisciplinary unit, and develop throughout the process. The way Monica and I reflected on the unit was very good. We had several quick reflection

meetings during the unit. Those usually occurred during recess. During those meetings we could openly and honestly discuss our current thoughts concerning the unit. Hartikainen states: "Teachers need to have a reflecting and learning community. We should ask ourselves and others what worked and did not work, what would be a better way to do things." (Mikko Hartikainen, personal communication 5.12.2013.) In my opinion, the unit would not have been the same without our consistent reflection. We were able to adapt to different problems and concerns quickly, and if necessary change the course of the unit. Additionally, the positive feedback we received from each other helped us to stay optimistic, and hopeful. Throughout the whole process, Monica and I were a team, and we were not alone with this experience.

Finally, the third research question is: How does an implementation of an interdisciplinary unit affect the teaching of it? Exploring this question made me think of my own teaching, and how was it different when teaching an interdisciplinary unit. Based on my experience, an interdisciplinary approach affects the teaching in two ways. Firstly, when teaching interdisciplinarity, the teacher has to keep two subjects in mind instead of one. This can at times be overwhelming for teachers, and possibly bring their insecurities out. For me, teaching physical education has been a new experience, since I am not a trained P.E. teacher. Therefore, when the subject alone has a lot of new components, bringing in another subject's viewpoint can be a challenge. Second way how interdisciplinarity affects teaching is that teachers have to invent new and clever ways how to approach their subject and contents. This, amongst all the lesson planning, assessments, and tasks can be time consuming for the teachers.

Physical Education as an Interdisciplinary Subject

As I examined closely my own personal journals I had written during the interdisciplinary unit, I noticed a strong theme which had made me think about interdisciplinary approach to physical education. In my notes, I asked myself questions: "Is a P.E. lesson an appropriate setting for interdisciplinary teaching?" And: "Why is it so challenging to bring interdisciplinarity into P.E. lessons?" These questions occurred frequently in the beginning of the interdisciplinary unit, and during the P.E. lessons. Additionally, the theme about P.E. as an interdisciplinary subject also appeared as I answered my main research question: What can interdisciplinarity do when it is being used in art education and physical education?

During the unit, I noticed how challenging it was to incorporate interdisciplinarity to P.E. lessons. Firstly, I noticed this as I saw the students'

behavior and attitudes towards the key concept of the unit, which was creativity. The students were not eager to discuss and explore different aspects of creativity in their P.E. lessons. To them, the most important aspect of P.E. lessons seemed to be simply being active, laughing, screaming, running, being competitive, and playing. According to Elliot (2003, 20):

It is important to note that the major focus of any interdisciplinary lesson should still be on physical activity and/or motor skill development. However, if done effectively, concepts can be integrated into the lesson without negative impact to either.
(Elliot 2003, 20)

Elliot makes an excellent observation. I partly agree with the statement. I do think the main focus on any physical education lesson, whether it would be interdisciplinary or not, should be on the physical activity. However, I do question Elliot's point about how interdisciplinary aspects can be brought into physical education lessons without losing focus on significant activities or skill development. With my interdisciplinary experiment, I was not able to do it fully as he claims. Monica also describes her general feelings about P.E.: "In P.E. they have learnt that they do not have to think, they just do. It is hard for them to change this." (Monica Joensuu, personal communication 4.2.2014.) As I stated in the story section, I did not have a successful start in the first few P.E. lessons of the unit. Firstly, the students were not willing to discuss about creativity and its connections to P.E. or sports, since they were so eager to start the lesson activities. And secondly, the question one of my students asked me in the beginning of the second interdisciplinary P.E. lesson, was eye-opening to me: "Miss Koponen, are we going to do that artistic stuff again?" This question (presented with an unenthusiastic tone), proved me how deeply the traditions and conventions (which I assume are, that P.E. is only about active games and playing) of P.E. have rooted. According to Peter Welch, Head of School at the International School of Helsinki: "Some subjects are more social and they play better with other subjects, some are less." (Peter Welch, personal communication 7.2.2014.) I see P.E. as one of these less social subjects. The character and setting of P.E. is unlike any other subject. By this I mean, how a physical education setting can possibly be the only subject during a school day when students can be physically active, and they are not assumed to be sitting down in a classroom. Therefore, perhaps it is the setting and the nature of the subject which makes it less social with other subjects. On the other hand, some other subjects might be more appropriate to be more social with others, for example visual arts.

As I look into interdisciplinarity occurring during P.E. lessons, especially from teachers' perception, another challenge is worthy to mention. It was difficult for me to think of different approaches to interdisciplinarity which would at the same time be engaging to the students, and incorporate games and playing. I noticed how the students were all particularly eager to play games which contained competitive aspects. Therefore, I found it challenging to try to think and implement competitive features of P.E. associated with art.

Yet another observation which made me realize how challenging it is to try to have interdisciplinary approaches during P.E. lessons was my definition of physical education. Before I can teach an interdisciplinary unit I must be clear that my definition of P.E. is adjustable and flexible for interdisciplinarity. Due to my own athletic background, I find physical activities to be extremely important part of school days, and leisure time. I have grown into the life of being physically active almost daily. My basketball background has played a big role in how my definition of sports and P.E. has formed. During the 19 years I have played basketball either as a hobby or professionally, I have realized that the most important aspect of any training session or a match is the part where I get to be physically active and play. According to Welch: "If you want to incorporate interdisciplinarity into P.E., it depends on how you define physical education. Is P.E. about teaching people certain physical or sporting skills?" (Peter Welch, personal communication 7.2.2014.) Therefore, my definition of physical education is that any child, who attends a school where most of their learning occurs in a stagnant stage in a classroom, should be as physically active as possible during the P.E. lessons. Moreover, in my opinion, also an interdisciplinary physical education lesson should provide as many physically active aspects as possible. As I have mentioned earlier, in my interdisciplinary teaching experience, this was very challenging.

Even though the approach Monica and I had chosen for our unit was carefully planned within the framework of an IB school, perhaps we could have taken another method for it. As I have described in the literature review, Cone et al. (2009) explains three different approaches to interdisciplinarity in physical education: the connected model, the shared model, and the partnership model. In our unit, Monica and I used the shared model in which "two subjects are integrated through a similar skill, topic, or concept that is part of the content for both subject areas." (Cone et al. 2009.) However, in my opinion, this model we used was not implemented in the unit in the most successful way. Therefore, if I were to conduct this experiment again in the future, I would try another model and an approach for the unit. This would be the partnership model. According to Cone et al.: In the partnership model teachers teach together, and at the same time in

the same space. In this model, the subject areas, skills and topics are merged together in order for the learning to occur concurrently in all subjects involved. (Cone et al. 2009.) Even though I was present during most of the visual arts lessons of our unit, and Monica was partly present in some of the P.E. lessons, we both could have participated more during each other's lessons. This could have brought another teachers viewpoint and knowledge directly to the skills and topics, which would have emphasized the interdisciplinary approach. In addition, in the partnership model both teachers would be experts of their own subject, and be a great resource and help for the students in their interdisciplinary investigations and assignments. Also, the presence of another teacher in all interdisciplinary lessons would bring support and security for teachers who do not feel comfortable in interdisciplinary teaching approaches. With this said, if the interdisciplinary unit with visual arts and P.E. were to happen again, I would try and implement it by using the partnership model as an approach.

Another aspect of interdisciplinarity and physical education is the internal and external integration. As I explain in the literature review, internal integration occurs naturally within the physical education setting. Examples of internal integration would be social and thinking skills, different concepts, and personal development. (Placek & O'Sullivan 1997, 20.) Based on my interdisciplinary unit experience, I do think that P.E. is an appropriate subject for internal integration. Different build-in connections of sports and physical education are fairly easy and natural to integrate into teaching. The students seem to adapt P.E. related areas as those are being explained in relation to different sports. With internal integration, the students are being introduced into different concepts and topics which are strongly connected to the subject itself. Therefore, in my interdisciplinary teaching experience there was not any student resistance with this internal integration. I believe that the reason for this non-resistance was because the concepts investigated (such as personal and social skills, team work, co-operative manners et cetera) were so naturally part of the physical education setting.

With these observations mentioned above, I have to emphasize three things. Firstly, I am not a trained physical education teacher. Therefore, I do not have all the needed knowledge, awareness and information what a trained physical education teacher would have. Secondly, my analysis and discussion about P.E. lesson's suitability for interdisciplinarity is based on only one type of experiment. There are different ways how interdisciplinarity can be incorporated into P.E. teaching, and I can only base my experience on the approach Monica and I had chosen for the unit. Also, I have to remember that my experience is based on an interdisciplinary unit which was

implemented with these two particular subjects, visual arts and P.E. I do not have experience on P.E. lessons which would investigate interdisciplinary connections with other subjects as math, social studies, history, music et cetera.

The Presence of Physicality in Other Subjects

The argument about physicality and its presence in other subjects appeared as I reflected on my main research question: What can interdisciplinarity do when it is being used in art education and physical education? Based on the feet-painting exercise during an interdisciplinary art class, it made me wonder about the importance of physical activities in all the subjects. Perhaps all different types of physical activities should be present not only in P.E., but in the other subjects as well. Welch states: "Kids who are involved in activities and sports do better academically. We also know that the mind works differently when you are moving." (Peter Welch, personal communication 7.2.2014.) Therefore, this particular feet painting exercise which occurred during an interdisciplinary visual arts class, truly seemed to have a positive impact on the lesson. According to Monica: "Physical movement and co-working with others released positive energy amongst the students. Perhaps art and other classes should emphasize the body movement more." (Monica Joensuu, personal communication 4.2.2014.) Monica and I saw a tremendous change in the class behavior and participation after the feet painting activity. This made me think of the importance of physical activities and physicality, and the value of those related to all the subjects.

With this observation, I am posing that perhaps physicality should be evidently present in all the other subjects of the curriculum. Travis (2010) elaborates this: "Most academic research supports the value of the arts, finding students who participate do better in school and are more likely to stay in school than those who don't. Similar findings have been found for students who are physically active." It is worthy to note that this claim would probably be the same if asked from all the subject teachers at middle school. They would probably all argue how the subject they teach should be more present during the school day and curriculum, and therefore benefit the students. However, in my opinion, as Travis explains, the importance of physical activities in students' lives is obvious. For that reason, why are those physical activities not present at school, and especially throughout the whole school day? According to Welch: "You could make the argument that physicality should be the core of all school experience." (Peter Welch, personal communication 7.2.2014.) With this argument, he poses the same argument as I do. When interdisciplinarity in physical education is working

well, the physical activities of P.E. should be transferred and implemented more strongly to the rest of the subjects studied at middle school. Therefore, interdisciplinarity which emphasizes this would, in my opinion, be implemented successfully.

When physical movement and activity occurred during a visual arts class, the positive results were not solely visible due to the physical aspect of the exercise. I do believe it played a significant role in it, but also another characteristic of P.E. was involved in the feet painting. This was the fun and co-operative side of it. The students were not alone creating their own work or marks with their feet, on a single piece of paper. They were part of a bigger picture. They were all making their own individual marks and putting effort to create something together as a group. The fun part was to see all the 13 students painting with their feet simultaneously. They were all close to each other, trying to stay on the slippery paper, and laughing hysterically. This reminded me of many group activities we have done during many P.E. lessons throughout the school year. In many activities the students work either individually, with pairs, in small groups or teams. They often have a common goal or aim for the game, which they try to accomplish. I believe that when physical activity is merged together with competitive aspects, enjoyment, and learning exercises, it can offer positive and significant learning experiences for the students.

Yet again, I can solely base my argument on how physicality should be more present in all the subjects based on this one feet painting exercise, and the observations I gathered from it. I am not an expert in physicality or physicalness, and I do not have the knowledge of this field.

Visual Arts as an Interdisciplinary Subject

The theme about visual arts as an interdisciplinary subject also appeared as I answered my main research question: What can interdisciplinarity do when it is being used in art education and physical education? After completing this research, I am more assured than before that visual arts truly is an excellent subject for interdisciplinarity. This became evident to me during all the visual arts classes I was able to participate as an observer or as a co-teacher. When aspects of P.E. were incorporated in to visual arts classes with an interdisciplinary approach, it seemed to blend in to the lessons naturally. There was no student resistance, complaining, or crankiness when Monica and introduced physical education areas which were connected with visual arts. The setting in the visual arts classroom was comfortable and open-minded, and it was fairly easy to have an interdisciplinary approach in visual arts lessons. Visual arts as a subject has so many different possibilities,

layers, and dimension, which can all be examined from so many different perspectives. Therefore, a visual arts lesson really is a good midpoint for interdisciplinarity. As I continued investigating and researching the topic of my study, I came across with a recently published article by Julia Marshall. According to her:

However, for art education to be a compelling alternative to other pedagogies and/or to play a pivotal role in shaping a new education model, general educators must understand its potential for deepening and transforming learning across the curriculum.

(Marshall 2014, 105)

I agree with Marshall's statement. In my opinion, visual arts could be used and treated effectively as a subject, which would have connecting elements between other subjects such as social studies, history, and music. In addition, if visual art has such a potential to deepen students learning, and interdisciplinarity, it definitely should be utilized more. I presented earlier that physical activities should be present not only during P.E. lessons, but across the curriculum as well. In the same sense, areas of art education could also be incorporated more widely in many subjects. Obviously this is already being utilized in some subjects by simply using different visual arts techniques, such as drawing, painting or photographing, to enhance different ways of making notes, creating mind maps, posters, calculations et cetera. However, Marshall (2014, 125) also states: "Given present priorities, in education, it appears that the time for art integration has come and, with it, the opportunity to alter the way general educators and art educators alike understand art integration." With this statement, I propose that interdisciplinary art education, in fact, should be explored widely in middle schools. As I interpret Marshall's statement, interdisciplinary art education offers a great range of opportunities for both art educators and general educators. Those different alternations, approaches, and methods of how to utilize interdisciplinarity in art education, would bring great versatility to education. Then, interdisciplinary art education would offer adaptable learning experiences to students, and teaching praxis to teachers. Additionally, teachers could use visual art's flexibility as an asset, and use it with multipurpose. Since in visual arts itself, there are so many different possibilities and approaches, those methods could be used as a part of interdisciplinary teaching.

To end with, I want to clarify that during the interdisciplinary teaching experience Monica was the qualified visual arts teacher. I was not. I am on the way of completing my degree in art education and becoming a certified

visual arts teacher. Therefore, Monica had the main responsibility of the activities, methods, and contents of each visual arts lesson, and with that she had a specific role. Monica has been a certified visual arts teacher for approximately ten years, and her expertise and knowledge of the field was evidently present throughout the entire process of planning, implementing and reflecting on our interdisciplinary unit.

The Importance of Reflection between Teachers

When I look back on the three phases of my research, during all of the three stages I had an opportunity to reflect on my thoughts with another teacher, Monica. Therefore, I cannot emphasize enough the meaning of reflection amongst teachers as the interdisciplinary unit is planned, implemented and completed. This theme was also present as I responded to my second research question: What are teachers demands to create an interdisciplinary unit, and how is interdisciplinary unit planned, implemented and reflected? In this section, I discuss the specifics of teacher reflection in detail.

Already in the beginning of the unit I started to feel fortunate to be able to observe and participate on another teachers work. Probably the greatest benefit I gained from this experience was to see Monica's teaching methods and approaches. She was calm and inspiring with a certain presence in the class room, and she always put the students' needs before hers. In addition to this, I appreciate that I had an opportunity to reflect on our interdisciplinary unit lessons together with Monica. With these reflection meetings, we were able to share our concerns and thoughts concerning the unit. However, these meetings were not only helpful in terms of the unit, but more importantly with my teaching. According to Cone et al. (2009): "Implementing an interdisciplinary program brings teachers together to create exciting learning experiences for students and to discover new ways of delivering the curriculum." Our reflection meetings brought us together, and we had the opportunity to exchange our views on each other's teaching philosophies and methods. Monica was able to understand more deeply what happens during P.E. lessons, and I was able to observe her visual arts lessons. Additionally, with our reflection meetings I was able to reflect on my own teaching with an experienced teacher. However, even though the reflection during the entire process was conducted in a good way, and we both agreed on how it was rewarding and important part of our interdisciplinary unit experience, it could have still been even better. As I stated earlier, if Monica and I were to complete this experiment again, we would do it by using the partnership model presented by Cone et al. (2009). With the partnership model, Monica and I would co-teach in all art and P.E. lessons. Along with this model, we could improve our teacher reflections

since we would both be present in all the interdisciplinary lessons, and we would be able to share our thoughts and reflections more profoundly. Additionally, by using the partnership model, Monica and I would plan all the interdisciplinary lessons together, and improve our lesson contents and tasks.

In the end, Monica and I had a final reflection meeting, which had a specific purpose: To reflect on what was successful and unsuccessful, and what could we do better in the future. This was an important part of the entire process. Therefore, the importance of the teacher reflections on an interdisciplinary unit occurred in the end. We agreed on how some aspects of the unit needed to be changed if we were to implement the unit again in the future. One of those was the key concept of the unit, creativity. Monica and I agreed on how creativity was perhaps too difficult of a concept for the students at this age to comprehend. This was connected to the thought of substantive integration. Marshall (2005, 228) explains the idea of substantive integration:

It reveals something of the core principles, structures, and practices of fields by moving beyond the most concrete level (depicting subjects matters particular to disciplines), to a more abstract level (tapping into the concepts that underlie the disciplines addressed) to the most profound and conceptual level (revealing concepts that are common to art, the disciplines with which it is integrated, and the mind in general).
(Marshall 2005, 228)

As Marshall states, our key concept, creativity, was investigated with substantive integration. We tried to implement it on an abstract level, which was too difficult for the students to grasp. Even though creativity as a concept is relevant for both visual arts and P.E., possibly it was introduced or investigated too conceptually. Perhaps we should have used more solid and concrete tasks and exercises. Possibly Monica and I should have tried to choose another key concept for the unit, and with that try to approach interdisciplinarity differently. Yet again, this observation would have never been discussed without having proper reflection meetings with Monica during and after the unit.

Another important part of the teacher reflection is the opportunity for teachers to expand their knowledge of other disciplines. Simultaneously, interdisciplinary approaches to not only learning, but also to teaching, can benefit teachers from multiple disciplines. When teachers from different disciplines combine their knowledge of the field, and try to find common

themes, they can enrich their own approaches to teaching. Travis (2010) states how an interdisciplinary approach to education can benefit teachers and students, when they can experience variety of different relationships between subject areas. In my opinion, Travis's statement is a significant part of the teacher reflections. With these teacher reflection meetings, teachers can build their confidence on teaching interdisciplinarity by having discussions and sharing thoughts concerning all the disciplines involved in the unit or course. Hartikainen elaborates this: "Many teachers have a perception which indicates that a teacher is an expert of his/her own discipline, and sometimes they feel pressured to be the expert." (Mikko Hartikainen, personal communication 5.12.2013.) Through reflection, teachers are then exposed to interdisciplinarity which can play an important role when they develop and formulate their own relationships between subjects involved. I see that with reflection meetings teachers can share their apprehensions amongst their colleagues, which can release the stress of being an expert. At its best, this can prevent possible future hesitations, doubts, and concerns the teachers might have about interdisciplinary teaching methods.

CONCLUSION

As I stated in the introduction, I consider myself an interdisciplinary person. I am a person who has investigated two different disciplines closely, and those have had a great influence on me. I start the conclusion by analyzing and reflecting on my own interdisciplinary identity in relation to this research.

This study made me think that perhaps one will not become an interdisciplinary person by just simply being introduced to two different disciplines and taught how those connect (as we did in our unit). Maybe it will not work in that way. Perhaps interdisciplinarity is something that needs to be formulated naturally, within self. As I explained earlier, I did not understand the true benefits of the two disciplines until later on in my life. Nevertheless, I did not simply learn those at school, I learnt those naturally by having dedication and passion for both. I was simply interested in those two disciplines.

Even I think that interdisciplinarity should be brought into daylight more at middle schools, interdisciplinarity occurs via real enthusiasm for two or more disciplines which eventually will shape one's personality and identity. In the introduction section, I described interdisciplinarity by using Moran's (2002, 15) definition: It can mean creating an undisciplined space which occurs in the gaps between disciplines, or yet trying to go above disciplinary boundaries overall. I still stand behind Moran's definition. In my opinion, I am simultaneously an interdisciplinary and un-disciplinary person. I am a strong combination of both visual arts and sports that perhaps my genuine identity lies in the gaps between these two, and it cannot be fully explained. Therefore, in order for interdisciplinarity to be effective, one must understand how and why it has made them the person they are. In my opinion, interdisciplinarity can not only be taught and learnt, it also needs to be grasped and comprehended.

This research has the potential for future studies. One possibility would be to investigate interdisciplinarity with visual arts and physical education, and conduct the study solely from the students perspective. It would be interesting and worthy of note to learn how students at middle school experience interdisciplinary approaches with these two subjects. Additionally, it would be appealing to dig slightly deeper into the world of physical education, and discover more detailed reasons why the nature of the subject has stayed as it is. Moreover, another study would be to research

how interdisciplinarity could be important in art education. This could offer many valuable models and ideas for future art educators.

Another interesting topic for future studies would be to conduct a research where the students would be part of the entire process. They would have a chance to raise their opinions and voices in all three stages of the interdisciplinary unit: planning, implementation and reflection. Especially, the students' significant role during the planning of the unit would be motivating to have. It would be appealing to see the different approaches and ideas the students would have to the unit, and perhaps this would help the students to be more motivated during the unit implementation as well. With that, this research would offer a more detailed perspective to the topic, especially from the students' point of views.

For this thesis, I did a lot of significant review of the literature, and discovered how visual arts is a very suitable subject for interdisciplinarity. Along with, I learnt how interdisciplinary approach in P.E. lessons can be challenging for the teachers. These two discoveries I did not only found from the literature, but also came across with during the implementation of our unit. Through the data I collected, I discovered how some subjects are more appropriate for interdisciplinarity than others. Visual arts is one great example. Visual arts is already a multidimensional subject which can be examined from so many different perspectives. At its best interdisciplinarity can occur in visual arts classes so naturally that it does not even need to be emphasized. Additionally, the way how my thinking about interdisciplinarity changed the most throughout this research was my observation how challenging it is to implement interdisciplinarity in physical education lessons. As I stated earlier, I do believe strongly that physicality and activities should be the main focus on any P.E. lesson, and those should be approached as lessons which have the highest amount of physical activity time. In my opinion, those lessons should be filled with enjoyment, laughter, physical activities and games. However, I do believe there is a different method or an approach to incorporate interdisciplinarity into P.E. lessons, and with that it can be done more effectively.

Finally, in my opinion, the purpose of interdisciplinary units in middle schools is not to try to make students experts of two disciplines. The true reason is in the connection making. Even the world where we live in is, to some extent, divided into categories similar to school subjects, it is still filled with concepts and phenomena which are combinations of many disciplines. Our job as educators is to try to help students understand those connections, and how perceptions, offered by various disciplines, can provide new and exciting

ways of looking at the world we live in. Monica and I were the two teachers who tried to offer these learning experiences with our interdisciplinary unit at the International School of Helsinki. I do believe we succeeded to present new and unusual ways of looking and studying these two subjects, visual arts and P.E. However, the true benefits and results of our unit can perhaps never be fully visible to us, they simply exist in the students' individual experiences.

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APPENDICES

Appendix 1.


MYP Unit Planner for P.E.

Teacher(s)	Henna Koponen, Robin Schneider	Subject group and discipline	Physical Education: Physical Education	
Unit title	Being creative	MYP Year	Grade 6	Unit duration 6 Weeks

Inquiry: Establishing the purpose of the unit

Key concept	Related concept(s)	Global context
 Creativity	 Physical and health education  Movement  Space	 Personal and cultural expression In the context of visual art and physical education we will look at ways of extending and enjoying our creativity through discovery and experimentation.

Statement of inquiry

 Students will understand that creativity inspires and develops personal expression.

Inquiry questions

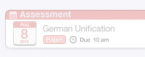
Factual Definition of creativity	<ul style="list-style-type: none">• What does creativity mean in physical education?• What different forms can creativity take in ice skating?• How can space be used to express creativity?• How can movement be expressed in space?• Is there a limit to personal expression?
Factual Forms of creativity	
Conceptual Space usage in creativity expression	
Conceptual Expressions of movement	
Debatable Personal boundaries in expression	

Objectives

C: Applying and performing


- recall and apply a range of skills and techniques effectively.
- recall and apply a range of strategies and movement concepts.

Summative assessment

 Assessment Task


Middle Years Programme Unit planner

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<ul style="list-style-type: none"> recall and apply information to perform effectively. D: Reflecting and improving performance <ul style="list-style-type: none"> identify and demonstrate strategies to enhance interpersonal skills. identify goals and apply strategies to enhance performance. 			
Approaches to learning (ATL)			
IB ATL CATEGORY	MYP ATL CLUSTER	SPECIFIC ATL SKILL	LEARNING EXPERIENCES
 Self-management	V. Reflection skills	(Re-)considering the process of learning; choosing and using ATL skills <ul style="list-style-type: none"> Develop new skills, techniques and strategies for effective learning Identify strengths and weaknesses of personal learning strategies (self-assessment) Demonstrate flexibility in the selection and use of learning strategies Try new ATL skills and evaluate their effectiveness Consider content <ul style="list-style-type: none"> What did I learn about today? What don't I yet understand? What questions do I have now? Consider ATL skills development <ul style="list-style-type: none"> What can I already do? How can I share my skills to help peers who need more practice? What will I work on next? Consider personal learning strategies <ul style="list-style-type: none"> What can I do to become a more efficient and effective learner? How can I become more flexible in my choice of learning strategies? What factors are important for helping me learn well? Focus on the process of creating by imitating the work of others 	

Middle Years Programme Unit planner

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		<ul style="list-style-type: none"> Consider ethical, cultural and environmental implications Keep a journal to record reflections
	IX. Creative thinking skills	<p>Generating novel ideas and considering new perspectives</p> <ul style="list-style-type: none"> Use brainstorming and visual diagrams to generate new ideas and inquiries Consider multiple alternatives, including those that might be unlikely or impossible Create novel solutions to authentic problems Make unexpected or unusual connections between objects and/or ideas Design improvements to existing machines, media and technologies Design new machines, media and technologies Make guesses, ask "what if" questions and generate testable hypotheses Apply existing knowledge to generate new ideas, products or processes Create original works and ideas; use existing works and ideas in new ways Practise flexible thinking – develop multiple opposing, contradictory and complementary arguments Practise visible thinking strategies and techniques Generate metaphors and analogies

Action: Teaching and learning through inquiry

Content	Learning process
<p>Knowledge & Skills:</p> <ul style="list-style-type: none"> 	<p>Learning Experiences</p> <p>How will students know what is expected of them? Will they see examples, rubrics, templates, etc.?</p> <p>A. Creativity rubric</p> <p>B. Video examples of movement in ice hockey, ice skating and body drawing</p>

Middle Years Programme Unit planner

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 Standards	<p>Standards</p>
	<p>C. On the topic of creativity, we observed different visual artists who have shown their creativity in their art making, examples of how dance may be an alternative tool for powerpoint presentation, and how hospitals are using creativity in their medical machines</p> <p>D. Template if the assessment requirements and objectives</p> <p>How will students acquire the knowledge and practice the skills required? How will they practice applying these?</p> <p>In P.E. the students practiced their ice skating movement sequences individually and in small groups. Bringing the knowledge and experience from art lesson to the P.E. lesson via creating similar movements which the students created in art.</p> <p>Interdisciplinary task with applying watercolor to the surface of the ice by simultaneously creating movement with ice skates.</p> <p>Inventing creative strategies which are implied to different games. Example Capture the flag.</p> <p>In visual arts, the students created a co-operative painting by using their bare feet and acrylic paint. The task was to try to create similar movements by painting with feet what students would create in ice skating.</p> <p>Do the students have enough prior knowledge?</p> <p>The unit started with conversations on creativity. How much students know about creativity? What creativity means? How is creativity seen in physical education/sports? When can one be creative? When have you heard the word creativity before?</p> <p>Teaching strategies</p> <p>How will we use formative assessments to give students feedback during the unit?</p> <p>Throughout the unit we ask prompting questions from students about creativity.</p> <p>Giving regular verbal feedback to the students.</p> <p>What different teaching methodologies will be employed?</p> <p>Process learning.</p> <p>Student led learning.</p> <p>Learning by doing.</p> <p>Experimenting.</p> <p>How are we differentiating teaching and learning for all? Have we considered those learning in the language other than their mother tongue? Have we considered those with special educational needs?</p> <p>Giving individual attention to the students in need for that (ex. EAL or/and SEN).</p> <p>Assuring and modifying that all the students are understanding the lesson tasks and assignments.</p>
	<p>Project F Showing creativity through an ice skating sequence (B)</p>

Middle Years Programme Unit planner

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	<p>Students will create their own creative ice skating sequence. They will create, compose and design variety of different movements on their own, using imagination, innovation, space, expression and ...</p> <p>Task Self evaluation and reflection</p> <p>Social skills and personal engagement. Students will self assess their own engagement during the unit. Areas of self assessment include: arriving on time to lessons, having P.E. equipment, and tak...</p>
	Describe how you will differentiate teaching & learning for this unit?
Resources	
Youtube: https://www.youtube.com/watch?v=ZRR0piNAvPw	

Reflection: Considering the planning, process and impact of the inquiry

Prior to teaching the unit	During teaching	After teaching the unit
We planned the unit in 4 x 60 minute planning sessions. Three of those 4 meetings were held together with the MYP Coordinator of the school.	Individual limitations of student creativity. Gender issues regarding participation and enthusiasm. Risk-taking by exploring and trying new ways of learning P.E. and art. Verbal teacher reflections after each lesson, both art and P.E. How did we succeed? How did the unit work? Highlights and frustrations during the unit. Risk-taker Reflecitive Open-mindedness	<p>The collaboration with the visual arts teacher was excellent! We were able to communicate, reflect on and share our subject related objectives and thoughts and work co-operatively.</p> <p>Students were able to demonstrated their learning through continuous conversations. Students were able to show their learning through the final assessment task in which they showed creativity and imagination with composing and performing their ice skating movement compositions. Students were encouraged and supported to extend their current knowledge of creativity to a new level. The creativity aspect of the unit was not only investigated through the movement compositions, but also through games and plays in which they had to think of strategies.</p> <p>Throughout the unit I gathered data with taking photographs and keeping a diary with comments and</p>









		suggestions. Additionally, I kept a detailed description of each lesson content.
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Appendix 2.


MYP Unit Planner for Visual Arts

Teacher(s)	Monica Joensuu	Subject group and discipline	Arts: Visual arts
Unit title	Creativity and Innovation	MYP Year	Grade 6
		Unit duration	4 Weeks

Inquiry: Establishing the purpose of the unit

Key concept	Related concept(s)	Global context
 Creativity	 Arts: Visual arts  Expression  Innovation  Physical and health education  Movement  Space	 Personal and cultural expression In the context of visual art and physical education we will look at ways of extending and enjoying our creativity through discovery and experimentation


Statement of inquiry

 Creativity inspires and develops personal expression.

Inquiry questions

Factual Definition of creativity	• What is creativity?
Factual Forms of creativity	• What different forms can creativity take?
Conceptual New ways of personal expression	• How can innovation change personal expression in visual art?
Conceptual Styles of visual expression	• How is creativity expressed in visual art?
Debatable Personal boundaries in expression	• Is there a limit to personal expression?


Objectives


 Objectives

Summative assessment



Student observation	S Forms and Styles of Creativity (A) In groups discuss what creativity is? Choose 3-5	iugiuvg
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	<p>examples of the forms of creativity. What styles of creativity do you use in school and at home? What limits us to use creativity and what enhances ...</p> <p>Performance S Innovation as part of creativity (B) OBJECTIVES OF THIS CRITERION: 1. Learn skills and develop the techniques and processes needed to create, perform and/or present art, with the teacher's guidance. a. Have you explained the 3 art...</p> <p>Reflection S Process and reflection (C) Through an ongoing record of their development and learning in visual arts: - recording their achievements and challenges and how this has influenced their own practice and understanding - by inc...</p> <p>Presentation S Engagement and attitude (D) 1. Have you been committed to be creative to try our many ideas, committed to be artistic and use a variety of processes,</p>	
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		and have you used all of the techniques given?	
Approaches to learning (ATL)			
IB ATL CATEGORY	MYP ATL CLUSTER	SPECIFIC ATL SKILL	LEARNING EXPERIENCES
 Self-management	V. Reflection skills	(Re-)considering the process of learning; choosing and using ATL skills <ul style="list-style-type: none"> • Develop new skills, techniques and strategies for effective learning • Identify strengths and weaknesses of personal learning strategies (self-assessment) • Demonstrate flexibility in the selection and use of learning strategies • Try new ATL skills and evaluate their effectiveness • Consider content <ul style="list-style-type: none"> - What did I learn about today? - What don't I yet understand? - What questions do I have now? • Consider ATL skills development <ul style="list-style-type: none"> - What can I already do? - How can I share my skills to help peers who need more practice? - What will I work on next? • Consider personal learning strategies <ul style="list-style-type: none"> - What can I do to become a more efficient and effective learner? - How can I become more flexible in my choice of learning strategies? - What factors are important for helping me learn well? • Focus on the process of creating by imitating the work of others • Consider ethical, cultural and environmental implications • Keep a journal to record reflections 	

 Thinking	IX. Creative thinking skills	Generating novel ideas and considering new perspectives <ul style="list-style-type: none"> • Use brainstorming and visual diagrams to generate new ideas and inquiries • Consider multiple alternatives, including those that might be unlikely or impossible • Create novel solutions to authentic problems • Make unexpected or unusual connections between objects and/or ideas • Design improvements to existing machines, media and technologies • Design new machines, media and technologies • Make guesses, ask "what if" questions and generate testable hypotheses • Apply existing knowledge to generate new ideas, products or processes • Create original works and ideas; use existing works and ideas in new ways • Practise flexible thinking — develop multiple opposing, contradictory and complementary arguments • Practise visible thinking strategies and techniques • Generate metaphors and analogies 	
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Action: Teaching and learning through inquiry

Content	Learning process
 Knowledge & Skills  Standards	Learning Experiences <p>How will students know what is expected of them? Will they see examples, rubrics, templates, etc.?</p> <ol style="list-style-type: none"> creativity rubric video examples of movement in ice hockey, ice skating, body drawing on the topic of creativity we observe visual artists who have shown their creativity in their art-making, examples of how dance may be an alternative tool for power point presentation and how hospitals are using creativity in their medical machines. template of the assessment requirements and objectives <p>How will students acquire the knowledge and practice the skills required? How will they practice applying these?</p>

	<p>Visual art:</p> <ul style="list-style-type: none"> -group conversations of what is creativity, how to recognize creativity in a person, and compare moments of creativity in their lives and that of others - experimenting with movement and creativity: painting with their feet (PE included), hand, by listening to music, and body traces on the floor -make posters of the limitations and benefits of creativity - analyse creative examples in the city and find examples of creative evidences - final art work: learn 3 new art techniques and find a creative solution to merge them into one art work. <p>Do the students have enough prior knowledge?</p> <ul style="list-style-type: none"> - by asking what they already know about creativity as a word and in which situations they have heard it used. <p>Teaching strategies</p> <p>How will we use formative assessments to give students feedback during the unit?</p> <ul style="list-style-type: none"> -Throughout the unit we asked prompting questions from the students about creativity. - giving regular feedback to the students. <p>What different teaching methodologies will be employed?</p> <ul style="list-style-type: none"> - process education - student-led learning - learning by doing - experimenting with various art materials <p>How are we differentiating teaching and learning for all? Have we considered those learning in the language other than their mother tongue? Have we considered those with special educational needs?</p> <ul style="list-style-type: none"> - Giving individual attention to the students in need for that (EAL, SEN) - Assuring and modifying that all students are understanding the lesson tasks and assignments.
	<div> <div> <div>Assessment</div> <div> <div>Aug 8 2021</div> <div>German Unification</div> <div>Paper Due 10 am</div> </div> </div> <div>Assessment Task</div> </div>
	Describe how you will differentiate teaching & learning for this unit?

Resources		
Youtube: http://		
Reflection: Considering the planning, process and impact of the inquiry		
Prior to teaching the unit	During teaching	After teaching the unit
We planned the unit in for 60 mins planning sessions, 3 of those 4 meetings were held together with the MYP coordinator of the school	<p>A. - Individual limitations of students' creativity - gender issues regarding participation and enthusiasm - Risk-taking by exploring and trying new ways of learning PE and Art B. - verbal teacher reflections after each lessons both in Visual Art and PE: how did we succeed, how did the unit work, highlights and frustrations during the unit</p> <p>C. risk-taker, reflective, open-minded</p>	

Appendix 3.

Creativity Rubric

HOW CREATIVE HAVE YOU BEEN DURING THE ART COURSE?

During the art classes we have discussed about the creativity, its form and styles. We have listed elements that stop us using the creativity in us and what benefits us to use our creativity.

We know, that creative people are always coming up with these “weird” ideas that no one else has ever tried. Because their unorthodox ideas are often successful, **that’s why you should learn to think outside the box.** Creativity is what propels society forward; without it, we’d still be rubbing two sticks together to heat our food.

Who needs Creativity? The answer is simple: EVERYONE needs it. Creativity is the act of coming up with a new idea, not just in art and music. Sports, pizza, the printing press, and the Internet all came from the creative process, meaning you wouldn’t be reading this document now if someone had not thought of a way to deliver it to you.

Now it is time to observe your own creativity level, and check out what to improve in your creativity.

Our aim in art is to combine 3 techniques and merge them into 1, using visual and physical movement.

Source: *From How To Create And Use Rubrics For Formative Assessment and Grading* (p.54), by Susan Brookhart, 2013, Alexandria, VA: ASCD. Copyright 2013 by ASCD.

COLOR THE APPROPRIATE BOX THAT BEST IDENTIFIES YOUR LEVEL OF CREATIVITY

	VERY CREATIVE	CREATIVE	ORDINARY	IMITATIVE
VARIETY OF IDEAS	Ideas represent a stratling variety of important concepts from different contexts or disciplines.	Ideas represent important concepts from different contexts or disciplines.	Ideas represent important concepts from the same or similar contexts or disciplines.	Ideas do not represent important concepts.
VARIETY OF SOURCES	Created product draws	Created product	Created product	Created product

	on a wide variety of sources, including different texts, media, resource persons, or personal experiences.	draws on a variety of sources, including different texts, media, resource persons, or personal experiences.	draws on a limited set of sources and media.	draws on only one source or on sources that are not trustworthy or appropriate.
COMBINING IDEAS	Ideas are combined in original and surprising ways to solve a problem, address an issue, or make something new.	Ideas are combined in original ways to solve a problem, address an issue, or make something new.	Ideas are combined in ways that are derived from the thinking of others (for example, of the authors in sources consulted).	Ideas are copied or restated from the sources consulted.
COMMUNICATING SOMETHING NEW	Created product is interesting, new, or helpful, making an original contribution that includes identifying a previously unknown problem, issue, or purpose.	Created product is interesting, new, or helpful, making an original contribution for its intended purpose (for example, solving a problem or addressing an issue).	Created product serves its intended purpose (for example, solving a problem or addressing an issue).	Created product does not serve its intended purpose (for example, solving a problem or addressing an issue).

Appendix 4.

MYP Self Evaluation Sheet for P.E.

Self Evaluation

Criterion D: Social skills and personal engagement

NAME: _____

SELF-EVALUATION (Scale 1 = Low and 5 = High)

QUESTION	1	2	3	4	5
1. I have always shown active participation and tried my best.					
2. I have taken initiative during lessons and managed to motivate others in participating.					
3. I have been communicating in a positive way with all of my classmates and contributed to a positive atmosphere within the class.					
4. I have always been fair and supportive towards my classmates and PE teacher.					
5. I have always paid attention, listened to given instructions and tried to develop my skills by using proper techniques.					

6. I have always arrived on time to lessons, had proper PE equipment and took care of my personal hygiene afterwards.					
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Further comments and reflection:

After reflecting on your actions, mark which score you think fits best with your achievement.

Achievement level	Descriptor
0	The student does not reach a standard described by any of the descriptors given below.
1-2	<p>A) Demonstrate attitudes and strategies that maintain communication and relationships with others.</p> <p>B) Show respect and sensitivity to myself, others and the physical environment some of the time.</p> <p>C) Take responsibility for own learning some of the time, but shows little enthusiasm and/or commitment to physical education.</p> <p>D) Show difficulty in reflecting on achievements.</p>

3-4	<p>A) Demonstrate attitudes and strategies that maintain communication and relationships with others.</p> <p>B) Show respect and sensitivity to myself, others and the physical environment most of the time.</p> <p>C) Take responsibility for own learning most of the time, and show some enthusiasm and commitment to physical education.</p> <p>D) Reflect on own achievements to a satisfactory level.</p>
5-6	<p>A) Demonstrate attitudes and strategies that improve communication and relationships with others.</p> <p>B) Consistently show respect and sensitivity to themselves, others and the physical environment.</p> <p>C) Take responsibility for own learning and usually show enthusiasm and commitment to physical education.</p> <p>D) Reflect critically on own achievements.</p>
7-8	<p>A) Demonstrate attitudes and strategies that deepen and enhance communication and relationships with others.</p> <p>B) Consistently show a high degree of respect and sensitivity to myself, others and the physical environment.</p> <p>C) Take responsibility for own learning and consistently show enthusiasm and commitment to physical education.</p> <p>D) Reflect critically on own achievements.</p>

Appendix 5.

MYP Movement Composition Assessment Sheet for P.E.

- INTERNATIONAL SCHOOL OF HELSINKI -

MIDDLE YEARS PROGRAM

PHYSICAL EDUCATION

GRADE 6 - ICE-SKATING AND RINGETTE SKILLS SEQUENCE

1) INTRODUCTION TO THE UNIT

During the 2nd Trimester grade 6 students will participate in a 4 week unit in Ice skating. The main assessment task will be to design and perform approximately 1 minute individual ice-skating and/or ringette skills sequence. The students will be assessed mainly on their Movement Composition (Criterion B) and Social skills and personal engagement (Criterion D).

2) DESIGNING AND PLANNING AN ICE-SKATING AND RINGETTE SEQUENCE

The first goal is to produce a written plan for your sequence; select a theme and movements. Try to select moves in which you are able to show the highest level of competence as possible. In order to reach higher levels you should include some more complex moves and perform them with good body form, control and quality. The written plan should follow the order of your sequence. Students may change and add elements to the written plan as they start practicing it.

3) IMPORTANT ELEMENTS IN CREATING A GOOD SEQUENCE

- Original theme, imagination, creativity and style of the composition
- Quality, efficiency and variety of different movements
- Take into account level, fluency, force and coordination of movements
- Combination and synchronization of movements (free skating, circling, balancing, stopping and ring handling)
- Links between movements and use of space
- Aesthetic and dramatic aspect
- Composition reflects to the chosen theme

4) LEVELS OF SKATING MOVEMENTS

BASIC	INTERMEDIATE	COMPLEX
Forward skating	Forward circling	Backward circling
Backward skating	Turning forward to backward skating	Turning backward into forward skating
Slide stop	Hockey stop	Multiple hockey stops both ways
Slide Turn	Jump and balance	Jump & Turn
Lift skate off the ice	Balance and slide with one foot	Balance and slide with one knee up
Puck handling forwards	Puck handling circling around	Puck handling skating backwards

5) ASSESSMENT CRITERION

Criterion B: Movement Composition (Maximum 6 points)

Students are expected to be able to compose sequences of aesthetic movement, through exploring movement possibilities and variations in accordance with the principles and concepts of a particular aesthetic activity and using this as inspiration.

Achievement level	Descriptor
0	The student does not reach a standard described by any of the descriptors given below.
1 – 2	The student selects some aesthetic moves that are appropriate to the requirements of the task. The student has some difficulty in adapting and/or creating moves. The sequence shows a simple use of space, time, level, force and flow. The composition is generally incoherent with many pauses, and shows limited creativity.
3 – 4	The student selects, adapts and creates aesthetic moves that are appropriate to the requirements of the task. The sequence shows a competent use of space, time, level, force and flow. The composition is mostly coherent, and shows some aspects of imagination and creativity.
5 – 6	The student selects, adapts and creates a wide range of aesthetic moves that are appropriate to the requirements of the task. The sequence shows a sophisticated use of space, time, level, force and flow. The composition is coherent, and shows aspects of imagination, creativity and style.

ICE-SKATING AND RINGETTE SEQUENCE PLANNING FORM

THEME NAME:	
STUDENT:	
GRADE:	
ESTIMATED LENGTH:	
PERFORMANCE DATE:	

SEQUENCE PLAN:

MOVEMENTS (Short description)
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.

